FH-B66CD/B70CD/B77CD
MHC-1200/1400

4067

SERVICE MANUAL

AEP Model

FH-B66CD
FH-B77CD
MHC-1200
MHC-1400

E Model
Australian Model

FH-B70CD

- FH-B66CD/B70CD/B77CD and MHC-1200/1400 are composed of following models. As for the service manual, it is issued for each component models, then, please refer to it.

COMPONENT MODEL NAME FOR FH-B66CD/B70CD/B77CD and MHC-1200/1400

System Component	FH-B66CD	FH-B70CD	FH-B77CD
Tuner, deck, CD, amplifier	HCD-H66	HCD-H70	HCD-H77
Speaker System	SS-H77		

System Component	MHC-1200	MHC-1400
Tuner, deck, CD, amplifier	HCD-H1200	HCD-H1400
Speaker System	SS-H1200	

29/94

12222
4237

SPECIFICATIONS

Power requirements	AEP, G, IT model: 220–230V AC, 50/60Hz E, EA, AUS model: 110–120V or 220–240V AC adjustable, 50/60Hz
Power consumption	90 watts
Dimensions	Approx. 615 x 285 x 260 mm (w/h/d) (24 ¹/₄ x 11 ¹/₄ x 10 ¹/₄ inches) incl. projecting parts and controls
Weight	Approx. 11.6 kg (25 lb 9 oz)
Supplied accessories	Remote commander (1) Sony SUM-3 (NS) batteries (2) AM loop antenna (1) FM lead antenna (1) (MHC-

Design and specifications subject to change without notice.

PARTS LIST

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- AUS: Australian model
  EA : Saudi Arabia model
  G : Germany model
  IT : Italian model

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Part No.	Description
	ACCESSORY & PACING MATERIALS ***********************
1-501-369-11	[illegible]
1-501-374-11	ANTENNA, LOOP
⚠.1-555-074-00	(AUS)......CORD, POWER
⚠.1-556-280-00	(E)......CORD, POWER
⚠.1-569-007-11	(E)......ADAPTER, CONVERSION 2P
⚠.1-569-008-11	(EA)......ADAPTER, CONVERSION 2P
⚠.1-575-131-11	(AEP, G, IT)......CORD, POWER
1-575-495-11	(1200, 1400)....CORD, SPEAKER
3-753-064-11	(B66CD : AEP, 1200)....MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
3-753-064-41	(B66CD, 1200)....MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)
3-753-065-11	(B70CD, B77CD, 1400)....MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE)
3-753-065-41	(B77CD, 1400)....MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN, PORTUGUESE)
*4-936-852-01	CUSHION (LOWER)
*4-936-853-01	CUSHION (UPPER)
*4-944-526-01	(E, EA)....INDIVIDUAL CARTON
*4-944-527-01	(AUS)....INDIVIDUAL CARTON
*4-944-528-01	(B77CD)....INDIVIDUAL CARTON
*4-944-529-01	(1400)....INDIVIDUAL CARTON
*4-944-530-01	(B66CD)....INDIVIDUAL CARTON
*4-944-531-01	(1200)....INDIVIDUAL CARTON

COMPACT HI-DENSITY COMPONENT SYSTEM

SONY®

MICROFILM

9-956-253-11

Sony Corporation
Audio Group

English
91B0456-1
Printed in Japan
© 1991. 2

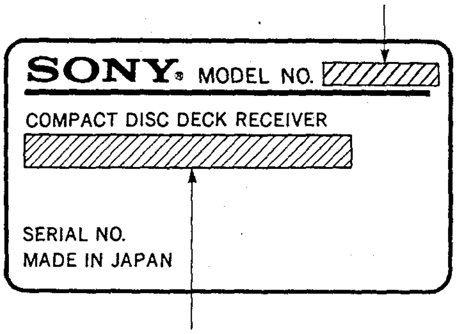
Published by Customer Relations and Service Group

SECTION 1
SERVICING NOTES

MODEL IDENTIFICATION

— Specification Labels —

IT model: FH-B66CD
IT model: FH-B77CD
AEP, G model: HCD-H66
E, EA, AUS model: HCD-H70
AEP, G model: HCD-H77
AEP, UK model: HCD-H1200
AEP model: HCD-H1400



SONY MODEL NO.
COMPACT DISC DECK RECEIVER
SERIAL NO.
MADE IN JAPAN

AEP model: AC: 220−230V~50/60Hz
UK model: AC: 240V~50Hz
G, IT model: AC: 220−230V~50Hz
E, EA, AUS model: AC: 110−120/220−240V~50/60Hz 90W

On operating voltage

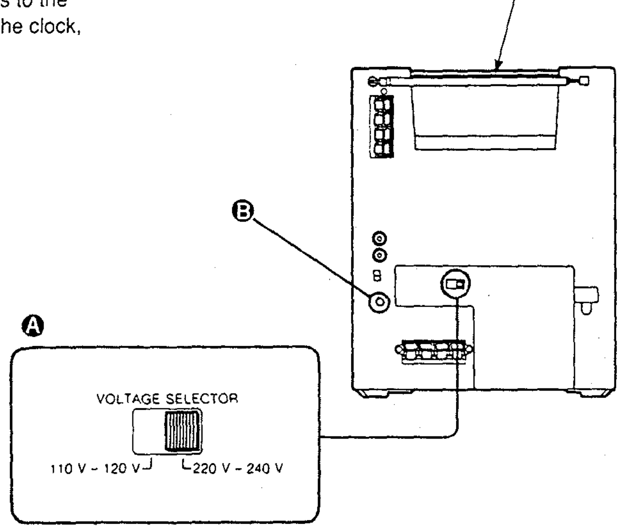
Before operating the stereo system, check that the operating voltage of your system is identical with the voltage of your local power supply. Ⓐ

AEP model	220−230V AC, 50/60Hz
UK model	240V AC, 50Hz
G, IT model	220−230V AC, 50Hz
E, EA, AUS model	110−120, 220−240V AC adjustable, 50/60Hz

On operation

- If the system do not operate due to power noise, press the system reset button at the rear. The system will resume operation. Ⓑ
  At this time, the system returns to the factory-set mode. Please set the clock, timer, or store stations again.

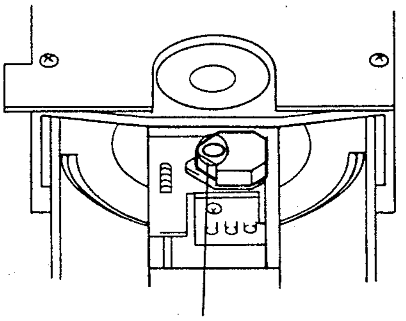
Telescopic antenna:
Use on HCD-H66/H70/H77.



Ⓑ
Ⓐ
VOLTAGE SELECTOR
110 V - 120 V
220 V - 240 V

LASER DIODE AND FOCUS SERCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



❶ Confirm that laser beam is spread.

❷ Up and down motion of the objective lens. (3 times)

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

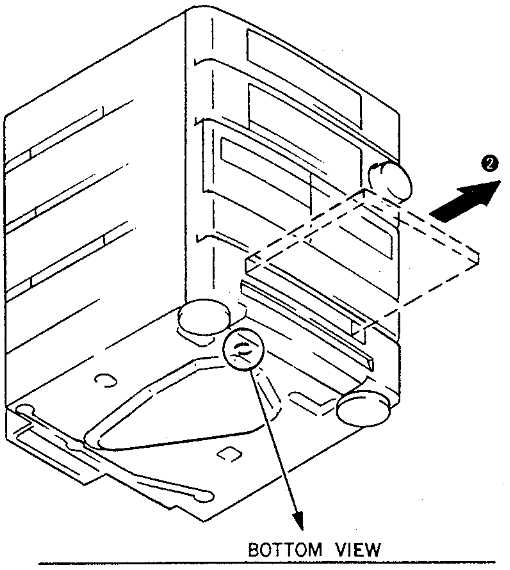
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

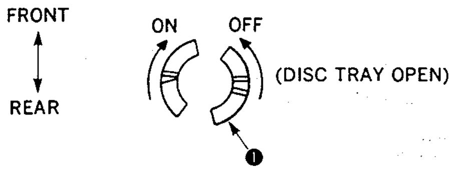
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF





(1) Insert to ❶ for tapering driver, etc., and turn in the direction of arrow OFF. (Disc tray open)

(2) Tray as come out little of front panel, pull out in the direction of arrow ❷ by hand.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

> **CAUTION**
>
> Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 mm
   - Emission Duration: continuous
   - Laser Output Power: less than 44.6 μW*

     * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.
2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

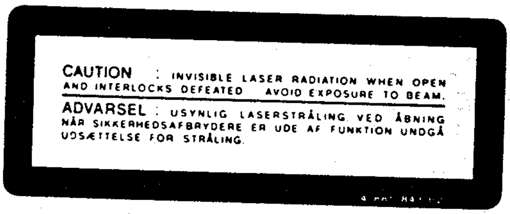
1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstråling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*

     * Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.
   - Klassifikation: Klasse IIIb.
2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning



CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED AVOID EXPOSURE TO BEAM.

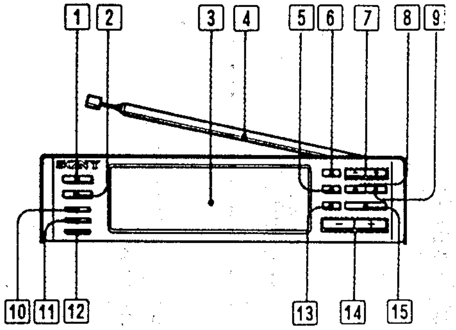
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

VAROITUS: Laite sisāltāā, laserdiodin, joka lāhettāā (nākymātōntā) silmille vaarallista lasersateilyā.

2-1. PARTS IDENTIFICATIONS

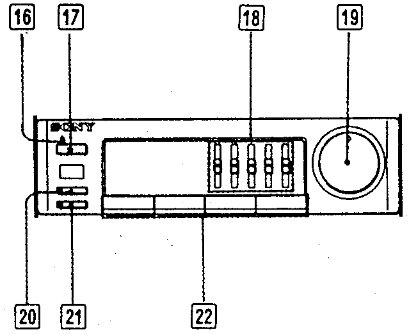
Tuner Section A

1 TIMER CONTROL button
2 SLEEP timer button
3 Display window
4 Telescopic antenna (HCD-H66/H70/H77)
5 AUTO tuning button
6 BAND selector
7 TUNING –/+ buttons
8 MEMORY button
9 ENTER button
10 TIMER SET button
11 CLOCK DISPLAY button
12 CLOCK SET button
13 NEXT button
14 PRESET/TIMER +/– (preset station scan/time set) buttons
15 SHIFT (memory page select) button



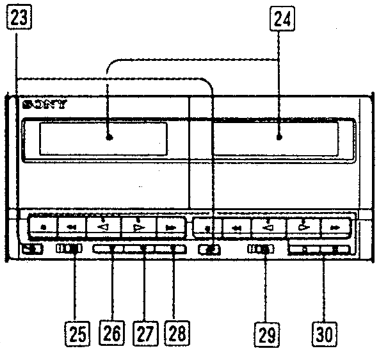
Amplifier Section B

16 STANDBY indicator
It is lit as long as the AC power cord is connected to a wall outlet.
17 POWER switch
18 5-band stereo graphic equalizer and spectrum analyzer
19 VOLUME control
20 DBFB (Dynamic Bass Feedback) button
21 S-SUR (simulated surround) effect button
22 Function selectors



Cassette Deck Section C

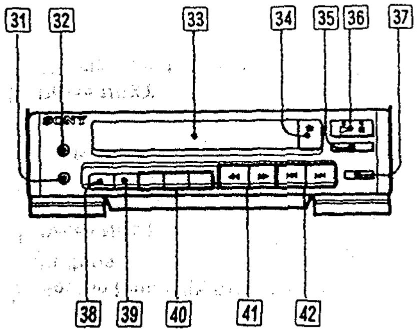
23 EJECT button
24 Cassette holders
25 DIRECTION MODE selector
26 AMS/BLK SKIP (Automatic Music Sensor/blank skip) button
27 TAPE DUBBING HIGH SPEED button
28 CD SYNCHRO (CD synchronized recording) button
29 DOLBY NR (Dolby Noise Reduction) switch
30 Tape operation buttons
◀◀ / ▶▶: Fast winding
▷: Forward play
◁: Reverse play
■ : Stop
REC (recording)
PAUSE



This section is extracted from instruction manual.

CD Player Section D

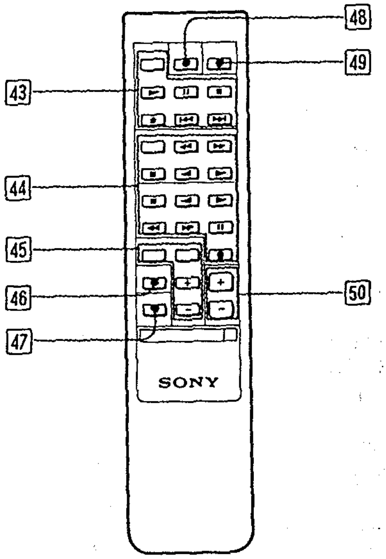
31 HEADPHONES jack (stereo minijack)
32 MIX MIC (mixing microphone) jack (minijack)
33 Disc compartment
34 ⏏ OPEN/CLOSE button
35 ■ (stop) button
36 ▷II (play/pause) button and indicator
37 EDIT button
38 TIME display selector
39 REPEAT button
40 PLAY MODE selectors
  CONTINUE play button
  SHUFFLE play button
  PROGRAM play button
41 ◀◀ / ▶▶ (manual search) buttons
42 I◁◁ / ▷▷I (Automatic Music Sensor) buttons



Remote Commander E

(HCD-H66/H1200)

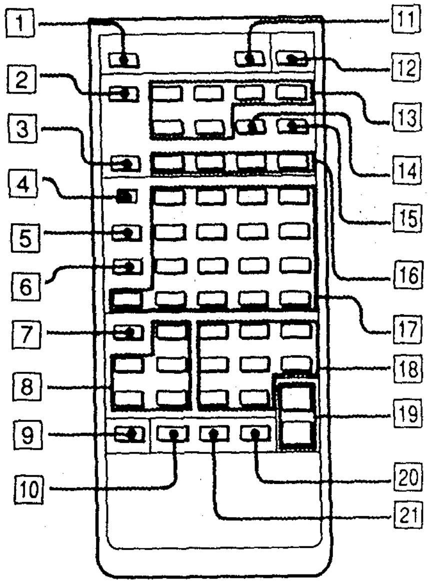
43 CD player operation buttons
44 Cassette deck operation buttons
45 Tuner operation buttons
46 PHONO select button
47 VIDEO/AUX select button
48 SLEEP timer button
49 POWER switch
50 VOL (volume) +/– control buttons



Remote Commander F

(HCD-H70/H77/H1400)

1 CLOCK DISPLAY button
2 CD player select button
3 TIME display selector
4 CD/TUNER numeric button function selector
5 TUNER select button
6 SHIFT button
7 TAPE (cassette deck) select button
8 Cassette deck operation buttons (deck A)
9 VIDEO (VIDEO/AUX) select button
10 PHONO select button
11 SLEEP timer button
12 POWER switch
13 CD player operation buttons
14 CHECK button
15 CLEAR button
16 CD play mode selectors
17 CD/TUNER numeric button
18 Cassette deck operation buttons (deck B)
19 VOL (volume) +/– controls
20 DBFB (Dynamic Bass Feedback) button
21 SURROUND (simulated surround) button



2-2. TUNER SECTION

Clock Setting

Setting the Clock

Example: Set to 9:25 in the morning.
When the AC power cord is connected, the display shows:
0:00 for HCD-H66/H77/H1200/H1400
AM 0:00 for HCD-H70.

1 **Press CLOCK SET.**

2 **Set the hour with PRESET/TIMER +/– buttons**

3 **Press NEXT.**

4 **Set the minute with PRESET/TIMER +/– buttons.**

5 **Press NEXT.**
The clock starts operating.

Information on the time

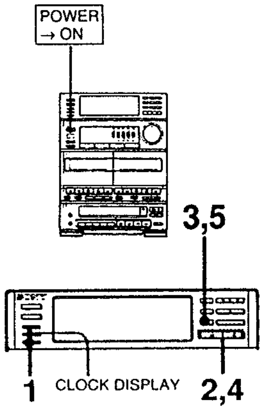
HCD-H66/H77/H1200/H1400 shows the time in 24-hour cycle.
HCD-H70 shows the time in 12-hour cycle.

When a power interruption occurs

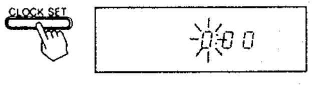
The power is backed up for approximately 1 day. If the power is recovered within 1 day, there is no need to reset the clock and timer. If it is longer than 5 minutes, both the clock and timer settings are erased, and "0:00" will flash on the display.

To check the present time while using the system

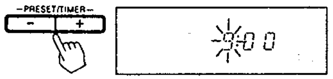
Press CLOCK DISPLAY.
The time display disappears after a few seconds.


POWER
→ ON
3,5
1
CLOCK DISPLAY
2,4

1


CLOCK SET
0:00

2

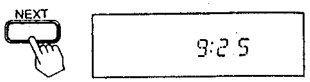

PRESET/TIMER
–
+
9:00

3

4

PRESET/TIMER
–
+
9:25

5



Radio

The automatic tuning allows you to receive stations whose signal is strong enough. When the signal is too weak, use the manual tuning.

Tuning in Automatically

1 **Press TUNER.**

2 **Press BAND repeatedly until the desired band appears.**
As you press BAND, the band changes as follows:
HCD-H66/H77/H1200/H1400:
FM → MW → LW
HCD-H70:
FM → SW → MW

3 **Press AUTO.**
Make sure that AUTO appears in the display.

4 **Select the station with TUNING + or –.**

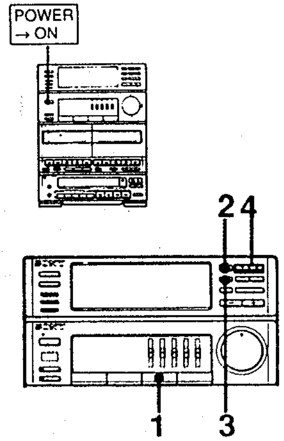
Tuning in Manually

1 **Press TUNER.**

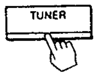
2 **Select band by pressing BAND.**

3 **Press AUTO so that AUTO disappears from the display.**

4 **Select the station with TUNING + or –.**

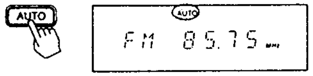

POWER
→ ON
2
4
1
3

1

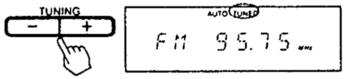


2

3


AUTO
AUTO
FM 85.75

4


TUNING
–
+
AUTO TUNED
FM 95.75

A total of 30 stations can be stored in any desired sequence, so that you can tune in the stored station directly by entering the memory page and number.

Storing Stations

1 **Tune in the desired station.**

2 **Press MEMORY.**
MEMORY appears for several second.

3 **While MEMORY is on, press SHIFT to select the memory page (A, B or C).**
The memory pages (A, B or C) can be classified according to the music category, station band, etc.

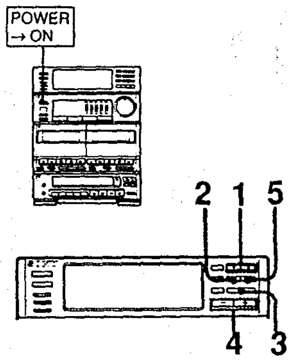
4 **While MEMORY is on, press PRESET/TIMER + or – to select the number (1 to 10).**

5 **Press ENTER.**
MEMORY disappears, and the station is stored.

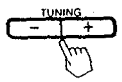
6 **Repeat 1 to 5 for each stations to be stored.**

If you cannot store a station successfully
Press MEMORY again so that MEMORY appears, and then proceed with the steps 3 to 5 above.
Be sure to operate while MEMORY is on (approx. 4 seconds.)

When you have selected the wrong page and number
Press MEMORY and then proceed with the above steps.

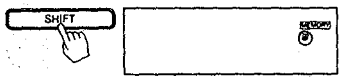


1

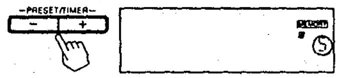


2

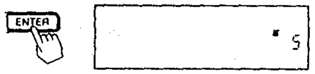
3



4



5



To Tune in a Preset Station

1 **Press SHIFT to select the memory page.**

2 **Press PRESET/TIMER + or – to select the desired number.**

To select the number directly (remote commander only) A (HCD-H70/H77/H1400)

1 Set the CD/TUNER selector to TUNER.

2 Press SHIFT and the numeric button.

Indicator on the display

TUNED: Appears when a station of sufficient signal strength is tuned in.
STEREO: Appears when an FM stereo program of sufficient signal strength is received.

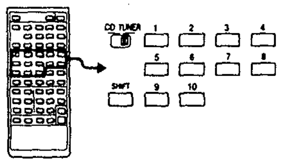
Antenna adjustment B

For FM reception, adjust the length and direction of the telescopic antenna (HCD-H66/H70/H77)
For MW, LW, and SW reception, find the best location of the AM loop antenna.

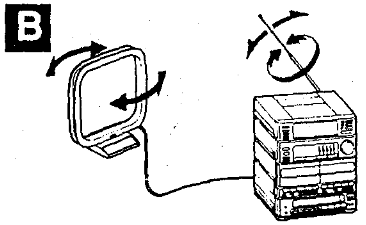
Can a previously stored station be erased?
No. Erasing only is not possible, but storing a new station erases the previous one.

Important
The stored stations remain for approximately 1 week even if no power is supplied (e.g. the power cord is disconnected, etc.). If they are erased, store the stations again.

A (HCD-H70/H77/H1400)



B



2-3. AMPLIFIER SECTION

Audio Adjustment

Volume Adjustment

Turn VOLUME **A** clockwise to increase the sound level, or counterclockwise to decrease it.
(Or press VOL + or – on the supplied remote commander.) (HCD-H70/H77/H1400)

Sound Quality Adjustment

To reinforce bass

Press DBFB **B**
The lower the sound level is, the more the bass is emphasized.

To adjust sound quality to your preference

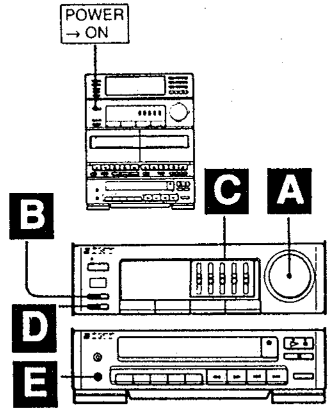
Adjust the graphic equalizer controls **C**

100 Hz: Boost or cut heavy bass.
400 Hz: Adjust the power, spaciousness and warmth of the sound.
1 kHz: Increase the presence of vocals.
4 kHz: Enhance the brightness of sound, or reduce stridency.
12 kHz: Highlight the fine details of instrumental sound.

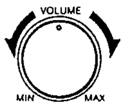
To activate surround effect for stereo sound

Press S-SUR (simulated surround) **D** during a stereo sound reproduction. This creates the atmosphere of a movie theater or concert hall.
This function is not effective for a monaural sound.

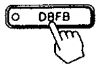
> **For personal listening**
> Connect headphones to HEADPHONES **E**.
> No sound comes from the speakers.



A



B



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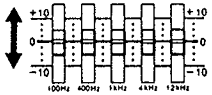

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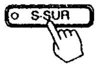
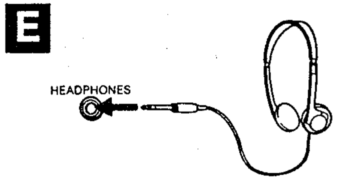


E



2-4. CD SECTION

Disc Playing

Playing the Entire Disc

1 **Press CD.**

2 **Press ⏏ OPEN/CLOSE to open the tray.**

3 **Place the disc with the printed side up.**

4 **Press ▷II.**
The tray closes and play starts.
The display shows **A** the track number, **B** elapsed playing time of the track and **C** track numbers.

> **Caution on adjusting volume**
> Do not turn up the volume while listening to the portion with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level portion is played.

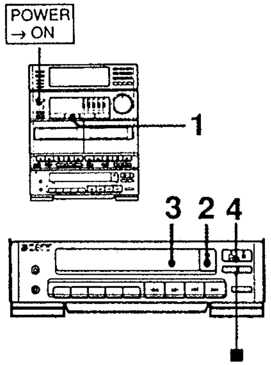
To stop play
Press ■.

To stop for a moment during play
Press ▷II. II appears in the display.
To resume play, press it again.

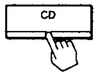
To stop play and open the tray
Press ⏏ OPEN/CLOSE.

To play an 8 cm (3-inch) CD
Place it on the inner circle of the tray. If the disc is provided with an adaptor, first remove it. Do not put a normal CD (12 cm/5-inch) on top of an 8 cm (3-inch) CD.

When the TUNER function is selected
The CD player section does not operate. This prevents interference to radio reception.

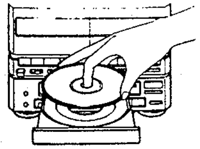


1



2

3



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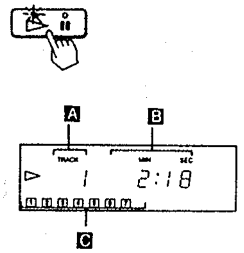


Locating a Particular Selection — Automatic Music Sensor (AMS)

The AMS locates the beginning of a selection.
This function works during play or pause.

To locate the beginning of the current or preceding selection **A-1**

Press I◁◁ as many times as required.
Keep I◁◁ pressed to skip selection.

To locate the beginning of a succeeding selection **A-2**

Press ▷▷I as many times as required.
Keep ▷▷I pressed to skip selection.

Locating a selection directly (remote commander only) (HCD-H70/H77/H1400)

You can locate a selection directly using the supplied remote commander.

1 Set the CD/TUNER selector to CD.
2 Press the numeric button for the desired selection.

If the selection number is greater than 12.
Use the >12 and 1 to 10 buttons. 10 functions as the figure 0.
e.g. To play from selection No. 22
Press >12, 2, 2.
To play from selection No. 30
Press >12, 3, 10.

Locating a Particular Point in a Selection

You can locate any particular point in the disc during play.

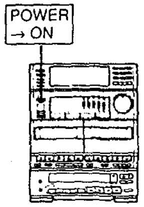
To search while monitoring the sound

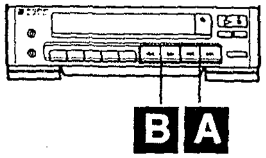
To move forward at high speed **B-1**
Keep ▶▶ pressed during play and release at the desired point.

To move backward at high speed **B-2**
Keep ◀◀ pressed during play and release at the desired point.

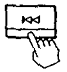
To search quickly

1 Press ▷II to set the unit in pause mode.
2 Keep ◀◀ or ▶▶ pressed.
The search speed increases, but there is no sound. Find the desired point by observing the display.
Press ▷II again at the desired point.

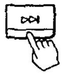




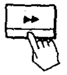
A-1



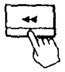
A-2



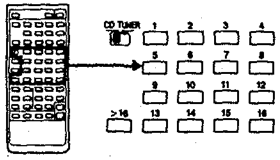
B-1



B-2



(HCD-H70/H77/H1400)



Information display

To change the time display, press TIME during play.
As you press TIME, the display changes to give you the following information.

A Elapsed playing time

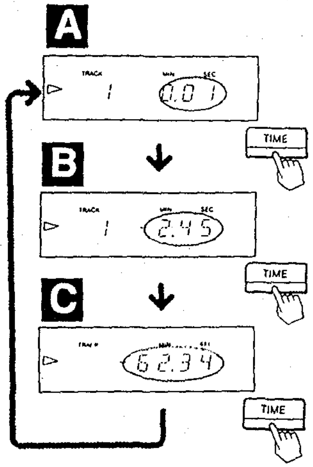
B Remaining time in a selection. If the current selection number is over 20, "----" is displayed.

C Remaining time of the disc

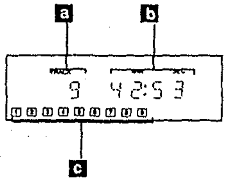
When the tray was closed by pressing ≜ OPEN/CLOSE **D**
The followings appear for approx. 5 seconds.
a Last track number
b Total play time of the disc
c Track numbers
For the discs containing 17 selections or more, up to 16 appear and the rest does not appear.

Notes on handling discs **E**

- To keep the disc clean, handle the disc by its edge. Do not touch the surface. **a**
- Do not stick paper or tape on the disc. **b**
- Do not expose the disc to direct sunlight or heat sources such as hot air duct, nor leave it in a car parked in direct sunlight as there can be a considerable rise in the temperature.
- After playing, store the disc in its case.

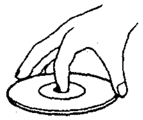


D

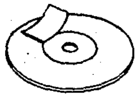


E

a



b



Playing in a Random Order — Shuffle Play

Shuffle play function plays all the selections in a random order.

1 **Press ≜ OPEN/CLOSE to open the tray.**

2 **Place the disc.**

3 **Press ≜ OPEN/CLOSE to close the tray.**

4 **Press SHUFFLE.**
SHUFFLE appears.

5 **Press ▷II.**

To stop playing
Press ■.

To cancel shuffle play
Press CONTINUE.
SHUFFLE disappears, and play continues in normal play mode.

Playing Repeatedly — Repeat Play

To repeat all selections **A**

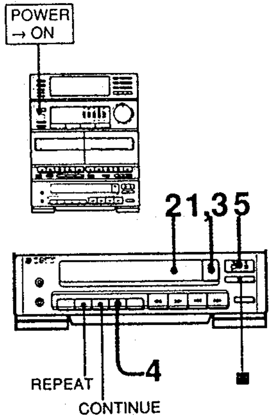
Press REPEAT once during play so that REPEAT appears.

To repeat a single selection **B**

Press REPEAT twice while playing the desired selection so that REPEAT 1 appears.

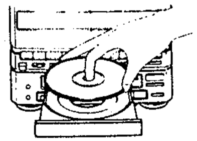
To cancel repeat play **C**

Press REPEAT so that neither REPEAT nor REPEAT 1 is on.


POWER
→ ON
2
1,3
5
REPEAT
4
CONTINUE
■

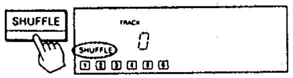
1

2

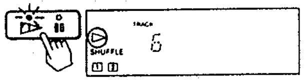


3

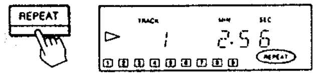
4


SHUFFLE
TRACK
0
SHUFFLE

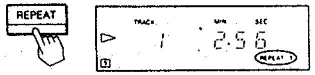
5


TRACK
6
SHUFFLE

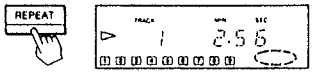
A


REPEAT
TRACK
MIN
SEC
1
2:56
REPEAT

B


REPEAT
TRACK
MIN
SEC
1
2:56
REPEAT

C


REPEAT
TRACK
MIN
SEC
1
2:56

Playing in a Desired Order — Program Play

(HCD-H66/H1200)

You can make a program for up to 20 selections in the order you want them to be played.

1 **Insert the disc.**

2 **Press PROGRAM.**
PGM appears in the display.

3 **Press ⏮ or ⏭ to display the desired selection.**

4 **Press PROGRAM.**

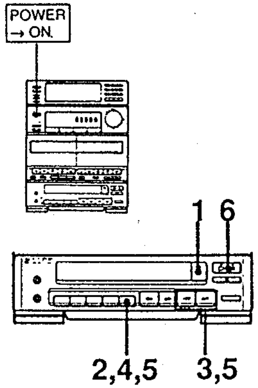
5 **Repeat steps 3 and 4 for the desired selections.**
A Last programmed selection
B Total playing time of selections
C Programmed selection numbers

6 **Press ▷II.**

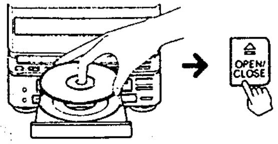
To stop playing
Press ■.
To restart the same program play, press ▷II.

To resume normal play
Press CONTINUE.
The program is erased and the play continues in the normal play mode.

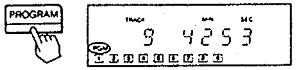
If "----" is displayed
- You have programmed a selection number over 20.
- The total time has exceeded 100 minutes.


POWER
→ ON
1
6
2,4,5
3,5

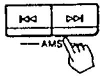
1



2

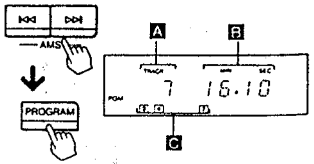

PROGRAM
TRACK
MIN
SEC
9
42 53
PGM

3

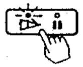


4

5


AMS
PROGRAM
A
B
C
TRACK
MIN
SEC
7
16.10
PGM

6



Playing in a Desired Order — Program Play

(HCD-H70/H77/H1400)

You can make a program for up to 20 selections in the order you want them to be played.

1 Insert the disc.

2 Press PROGRAM.
PGM appears in the display.

3 Press the numeric buttons for the desired selection in the desired order to be programmed.
A Last programmed selection
B Total playing time of selections
C Programmed selection numbers

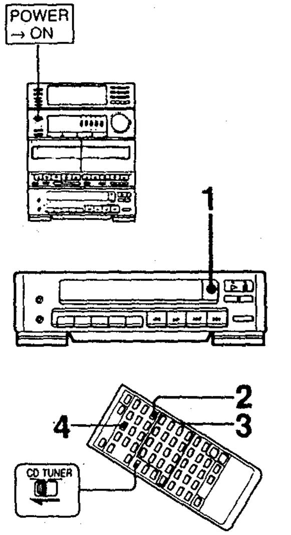
4 Press ►.

To stop playing
Press ■.
To restart the same program play, press ►.

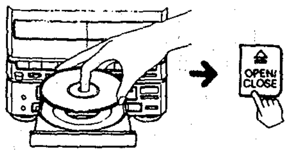
To resume normal play
Press CONTINUE.
The program is erased and the play continues in the normal play mode.

If "—" is displayed

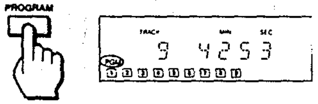
- You have programmed a selection number over 20.
- The total time has exceeded 100 minutes.



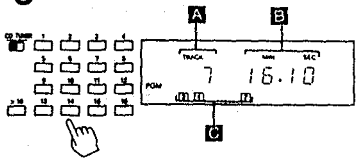
1



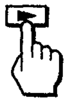
2



3



4



To check your program (HCD-H70/H77/H1400)

(Remote commander only)

Press CHECK on the remote commander
As you press it, the track numbers appear in the order in which they are programmed. At the last selection, "End" appears in the display window.

To add a selection to the end of the program

Follow the same procedures as "Playing in a Desired Order" while the unit is in the stop mode.
You cannot add selections during play.

To erase the entire program

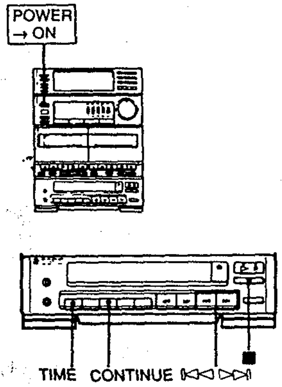
Press ■ once during stop; twice during play. The program is also erased when you press ≜ to open the tray or turn off the system.

To erase a particular selection in the program (HCD-H70/H77/H1400)

(Remote commander only)

1 Press CHECK to display the track number to be erased.
2 Press CLEAR.

To check the remaining time
Press TIME once to see the remaining time of the selection being played; twice to see the total remaining time of the programmed selections; once more to return to the initial display.



2-5. DECK SECTION

Tape Playback

Playback Operation

1 Press TAPE.
TAPE appears in the display.

2 Insert the tape.

3 Press ◁ (for reverse side playback) or ▷ (for front side playback).

How to select the DIRECTION MODE position

To playback one side: Select ═.
To playback both sides: Select ⊂⊃.
The DIRECTION MODE setting is effective for both decks.

To stop playback
Press ■.

Playing Back Automatically after Fast Winding – Auto Play

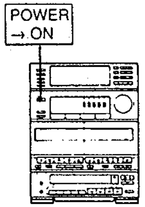
This function starts playback automatically from the beginning of the side after fast winding.

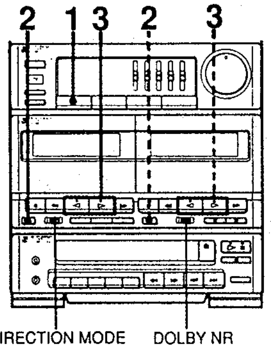
To start playback from the beginning of the front side:
press ▷ while keeping ◀◀ pressed
To start playback from the beginning of the reverse side:
press ◁ while keeping ▶▶ pressed.

When listening to the cassette recorded with Dolby noise reduction system*
Set the DOLBY NR switch to ON.

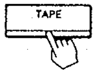
What is the Dolby NR system?
Dolby NR (noise reduction) system reduces tape hiss noise in low-level high-frequency signals. The system boosts these signals in recording and lowers them in playback.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ▯▯ are trademarks of Dolby Laboratories Licensing Corporation.

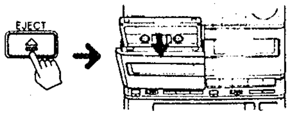




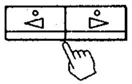
1



2

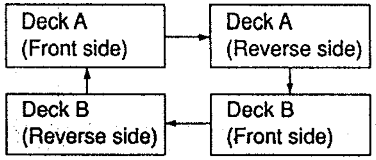


3



Playing Both Decks in Succession – Relay Play

Relay play always follows the sequence below regardless of where playback starts. When playback of the reverse side of the tape in deck B is completed, the following sequence continues 4 more times.



1 Insert recorded cassettes in both decks.

2 Set DIRECTION MODE to RELAY.

3 Press ▷ or ◁ on deck A or deck B.

To stop relay play
Press ■ of the deck playing.

Notes on Cassettes

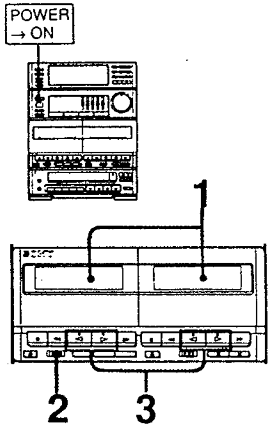
To protect recording A

Break out the tab on the left shoulder of the cassette side of which recording is to be protected.

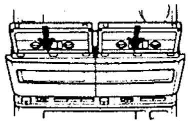
To re-record the cassette B

Cover each slot with plastic tape.

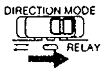
When using a TYPE II (CrO2) cassette, be careful not to cover the detector slots which are necessary for automatic tape type detection. C



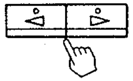
1



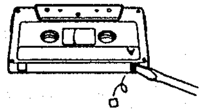
2



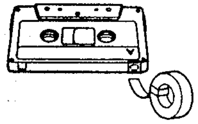
3



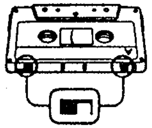
A



B



C



Locating the Beginning of a Selection during Playback – Automatic Music Sensor (AMS)

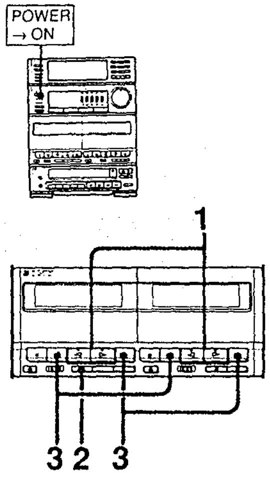
The AMS locates the beginning of a selection by detecting the blank spaces between selections. To assure correct operation of the AMS, there must be a blank of 4 seconds or longer between selections.

1 **Press ▷ or ◁ to start playback.**

2 **Press AMS/BLK SKIP to illuminate its indicator.**

3 **Press ▶▶ or ◀◀ referring to the following table.**

Direction indicator	Side of the cassette being played	Desired selection	
		Next selection	Selection being played
▷	Front side	▶▶	◀◀
◁	Reverse side	◀◀	▶▶



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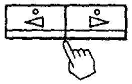
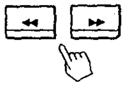


2

AMS/BLK SKIP

3



Skipping a Blank

The deck automatically goes into the fast winding mode when it detects a blank of about 10 seconds or more.
Playback resumes when a new selection begins.

Press AMS/BLK SKIP to illuminate its indicator. A

To cancel the blank skip function
Press AMS/BLK SKIP again so that the indicator goes off.

A

AMS/BLK SKIP

Recording (Deck B)

Recording Operation

Use only TYPE I (normal) or TYPE II (CrO2) tapes for recording.

1 **Insert the tape.**

2 **Select program source with the function selectors and play it.**
The display shows the selected program source.

3 **Set DIRECTION MODE.**
To record one side, set to ⚌.
To record both sides, set to ⊂⊃.

4 **Set DOLBY NR.**
To use the Dolby NR system, set to ON.
Otherwise, set to OFF.

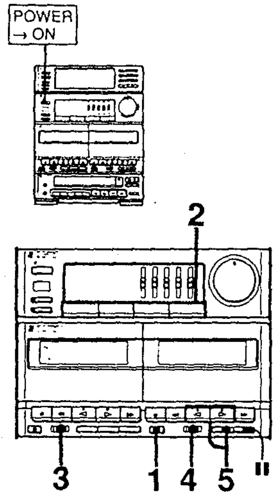
5 **While keeping REC pressed, press ▷ (for front side recording) or ◁ (for reverse side recording).**
Recording starts.

To stop recording
Press ■.

Notes
- Even if you set DIRECTION MODE to ⊂⊃, recording stops at the end of the reverse side. To record both sides, be sure to start with the front side.
- Graphic equalizer controls are not effective for recording.
- The recording level is fixed and cannot be adjusted manually.

How to start recording precisely
1 Press PAUSE after step 4 in "Recording Operation" above.
2 While keeping REC pressed, press ▷ or ◁.
3 Press PAUSE again at the desired point.

If whistling noise is heard during recording MW and LW recording (HCD-H66/H77/H1200/H1400)
Slide the ISS (Interference Suppress Switch) at the rear to the position depending on which best reduces the noise.



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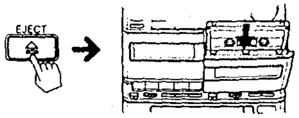

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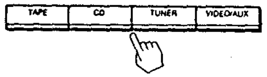

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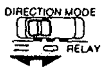

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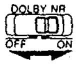

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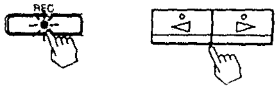


CD Recording (Deck B)

CD Recording Operation

1 **Insert a blank tape in deck B.**

2 **Set DIRECTION MODE.**
To record one side, set to ⇌.
To record both sides, set to ⊂⊃.

3 **Set DOLBY NR.**
To use the Dolby NR system, set to ON. Otherwise, set to OFF.

4 **Press CD of the function selector.**

5 **Place the disc with the printed side up, and close the tray.**

6 **Press CD SYNCHRO.**
CD SYNC appears in the display.
The CD player and cassette deck are set in pause mode.

Note
The front side is automatically selected to be recorded in. To record in the reverse side, press ◁.

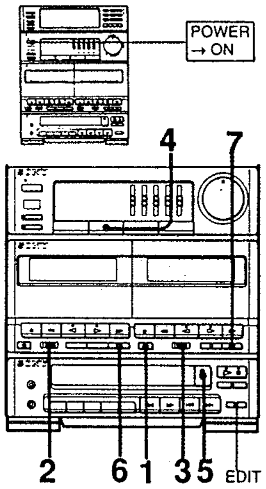
7 **Press PAUSE of the cassette deck.**
The CD play and recording start simultaneously.

Note
When the tab on the cassette has been removed, the CD SYNCHRO button does not operate.

Is it possible to listen to program sources other than CD during CD recording?
No. If you press another function selector, the CD play stops and the program of the pressed button will be recorded.

Blanks between selections during CD recording
A 3-second blank is automatically inserted between selections.

Is it possible to adjust the sound quality for CD recording?
No. The graphic equalizer does not work.



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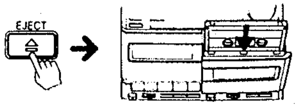

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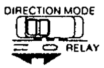

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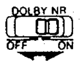

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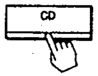

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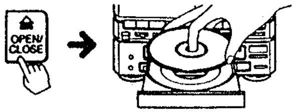

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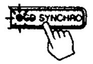

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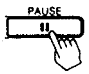


(HCD-H66/H1200)

If the tape ends in the middle of a selection A

The tape is rewound to the beginning of the selection. Then the selection is re-recorded so that it fades out naturally at the end of the tape.

If the recording is to be continued to the reverse side, the selection that faded out on the front side is recorded from its beginning on the reverse side.

To record only desired selections

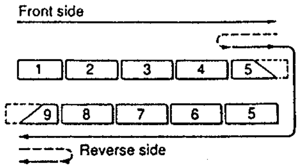
Before pressing CD SYNCHRO, program the desired selections. (See page 36.)
To program for both sides continuously, insert a pause section between the selections for side A and those for side B.

1 Program the selections for side A.
2 Press ⏸ for CD operation on the remote commander.
The total play time will be reset to 0.
3 Program the selections for side B.
4 Press CD SYNCHRO.
5 Press PAUSE on the cassette deck.
Recording starts.

When the CD play of side A ends, the CD player enters pause mode. When the tape comes to the beginning of side B, the CD play of side B starts and the recording starts automatically.

Important
- Total playing time of the program of each side must be within the length of each side of the tape.
- Up to 20th selection in the disc can be programmed. 21st selection cannot be programmed.

A



(HCD-H70/H77/H1400)

If the tape ends in the middle of a selection A

The tape is rewound to the beginning of the selection. Then the selection is re-recorded so that it fades out naturally at the end of the tape.

If the recording is to be continued to the reverse side, the selection that faded out on the front side is recorded from its beginning on the reverse side.

Programming selections while checking the total playing time – Program Edit

You can adjust the total playing time to the tape duration.

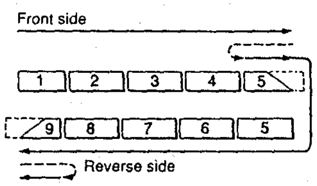
1. **Press PROGRAM.**
   "PGM" appears in the display.
2. **Choose the desired selection to be prorammed with ⏮ or ⏭ and check the time.**
3. **If satisfactory, go to the next step.**
   If not, repeat step 2 and choose another selection.
4. **Press PROGRAM.**
5. **Repeat steps 2 to 4 to program the desired selections for side A.**
   "A" remains lit.
6. **Press II on the remote commander.**
   "P" appears in the display and the total playing time is reset ot 0. "B" lights up.
7. **Repeat steps 2 to 4 to program the desired selections for side B.**
8. **Press CD SYNCHRO and PAUSE on the cassette deck.**
   The CD play and recording start simultaneously.

When the CD play of side A ends, the CD player enters pause mode. When the tape comes to the beginning of side B, the CD play of side B starts and the recording starts automatically.

Important

- Total playing time of the program of each side must be within the length of each side of the tape
- Up to 20th selection in the disc can be programmed. 21st selection cannot be programmed.

A



Editing the CD for Recording

The CD player automatically edits the selections on a CD according to the tape length.

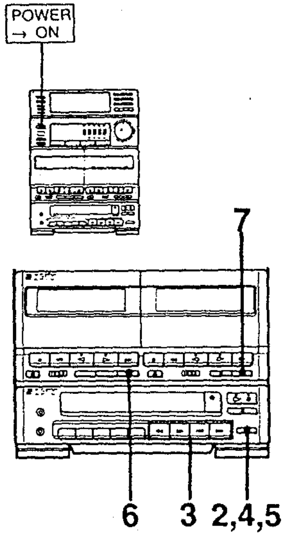
1. **Perform 1 to 5 of the CD recording operation, on page 48.**
2. **Press EDIT.**
   Make sure that EDIT and - - - - appear in the display.
3. **Designate the tape length of one side using ▶▶, and ◀◀, or ▷▷I and I◁◁ .**
   As you press ▶▶ or ◀◀, the minute display changes as follows:

   23 ↔ 27 ↔ 30 ↔ 37 ↔ 45 ↔ - -

   As you press ▷▷I or I◁◁, the seconds increase or decrease by 10. After 50, the seconds show 00 and the minutes increase by 1.
4. **Press EDIT.**
   The selections to be recorded are determined automatically. For details, see page 54.
   Then the display shows A the last selection to be recorded, B total playing time, and C selections to be recorded.
5. **For recording both sides, press EDIT again.**
6. **Press CD SYNCHRO.**
7. **Press PAUSE of the cassette deck.**
   The recording starts.

Note

- Up to 20th selection in the disc can be recorded. 21st selection cannot be recorded.
- Designate the total playing time shorter than the tape length in step 3.



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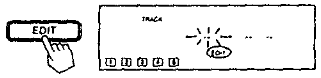

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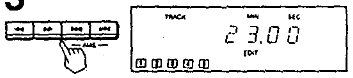

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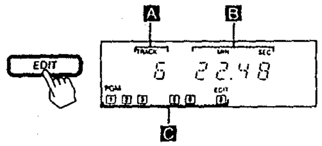

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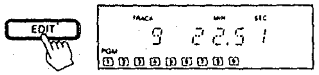

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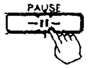


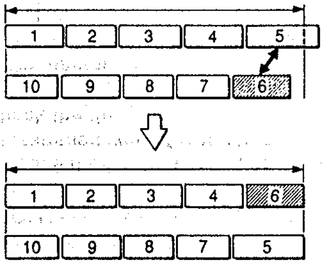
To record desired selections on the front side

Before pressing EDIT, program the desired selection.

How the CD player determines the selections A

The CD player selects the selections from the first one in the CD, summing up each playing time. When the total playing time exceeds the specified tape length, the last selection is eliminated. Then, the CD player looks for a selection whose length is within the remaining tape and substitutes it for the eliminated one.

A



Tape Dubbing (from deck A to B)

Dubbing the Whole Tape

1 **Insert the recorded tape in deck A and the blank tape in deck B.**

2 **Set DIRECTION MODE.**
To dub on one side: ═
To dub on both sides of the tapes with the same length: ↻
To dub on both sides of the tapes with the different length: RELAY

3 **Press HIGH SPEED.**

4 **Press PAUSE.**
High speed dubbing starts.

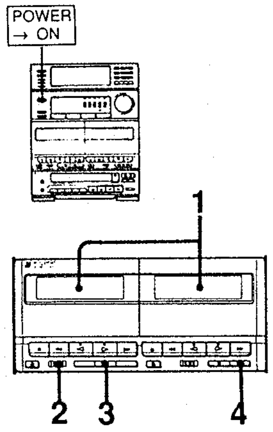
To stop dubbing
Press ■ on either deck A or B.
The tapes in both decks stop.

Note on DIRECTION MODE setting

Position	Operation
═	Dubbing stops at the end of the tape.
↻	When the tape in one deck comes to its end, it reverses immediately regardless of the tape position of the other deck.
RELAY	When the tape in one deck reaches its end, it stops until the other tape also comes to its end, and then both tapes reverse together.

When dubbing starts from the reverse side in the RELAY mode
At the end of the reverse side, dubbing stops automatically.

Note
During high speed dubbing, only ■ is operative.



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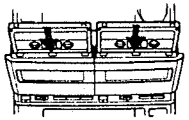
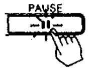


2

DIRECTION MODE
RELAY

3

4



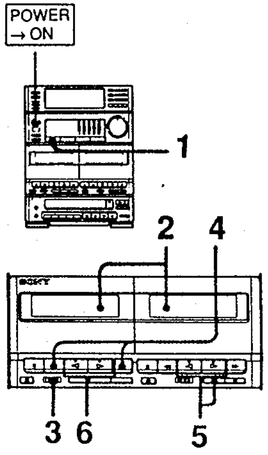
Editing the Tape

1 Press TAPE of the function selector.
2 Insert the recorded tape in deck A and the blank tape in deck B.
3 Set DIRECTION MODE to ═ or ↻.
4 Locate the beginning of the portion to be dubbed on deck A, using ◀◀ or ▶▶ and then stop the tape.
5 While keeping REC pressed, press ◁ or ▷ of deck B.
6 Press ◁ or ▷ of deck A.
Normal speed dubbing starts.

To stop dubbing
Press ■ on both decks.

Is it necessary to set DOLBY NR?
No. The tape in deck B is automatically recorded in the same state as the tape in deck A.

Is it possible to listen to program sources other than tape during dubbing?
During high speed dubbing, yes. Any program source can be selected with the function selectors.
During normal speed dubbing, no. The source changes to that of the function selector pressed and the tape playback cannot be dubbed.



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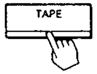

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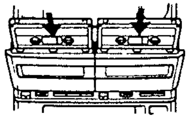

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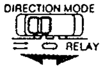

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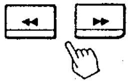

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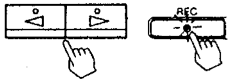

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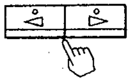


Timer-activated Operation

The power can be turned on and off automatically so that you can record a radio program while you are out, or wake up to music, etc.

The preset timer-on and -off time remain until you reset them or the power cord is disconnected.

Before setting the timer

- Make sure the clock is set correctly.
- If you want to record a radio program, be sure to insert a cassette tape long enough.

Timer Setting

The illustrations show an example that the system turns on at 9:30 and off at 10:15.

1 **Press TIMER SET.**
TIMER ON appears and a figure indicating hour blinks.

2 **Set the hour and minute of the timer-on time with PRESET/TIMER + or –, and NEXT.**
TIMER OFF appears and a figure indicating hour blinks.

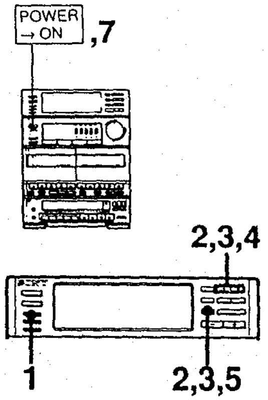
3 **Set the hour and minute of the timer-off time with PRESET/TIMER + or –, and NEXT.**
The program source blinks.

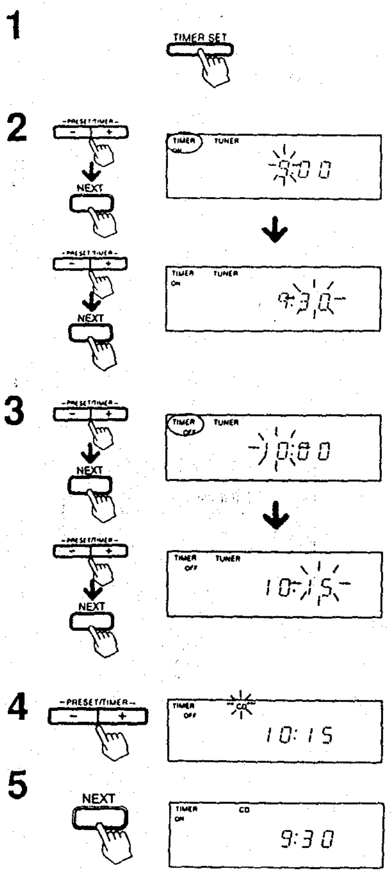
4 **Select the program source with PRESET/TIMER + or –.**
As you press + or –, the source changes:
TUNER ↔ TUNER REC ↔ TAPE ↔ CD

5 **Press NEXT.**

6 **Prepare for the source, selecting a stored station, inserting the disc or tape.**

7 **Press POWER to turn off the system.**
Make sure that TIMER is on.
At the timer-on time, the system turns on automatically.





To change the time and program

1 Press TIMER SET.
The timer-on hour blinks.

2 Press NEXT until the item to be changed blinks.

3 Press PRESET/TIMER + or — until the desired time or source appears.

4 Press NEXT until TIMER ON time appears.
The display, then, shows TIMER OFF time, and returns to the previous display.

When you do not want to operate the timer program

Press TIMER CONTROL to turn off TIMER. To reactivate the timer, press TIMER CONTROL to display TIMER.

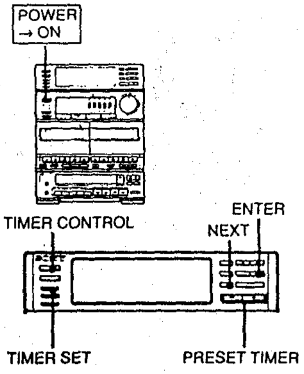
When the power is already on at the preset time

The function mode will be automatically changed to the preset one, even if you are playing a program of another function. However, when you have preset the TUNER REC mode, recording will not start even though the station is tuned in. Be sure to turn the power off before the preset time for tuner recording.

Important

On the recording side of a tape during timer recording

Playback or recording always starts from the front side (the side facing you).
To record on the other side, be sure to turn over the tape, otherwise, recording on the front side will be erased.



Sleep Timer Operation

By setting the sleep timer, the system power can be turned off after the preset duration.

Sleep Timer Setting

1 Play the desired program source.

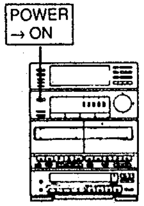
2 Press SLEEP to select the desired duration in minute.
As you press SLEEP, the indication changes as follows:
90 → 80 → ... 10 → --

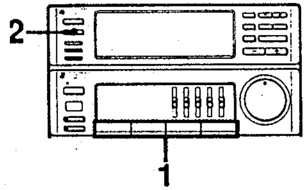
To turn off the system before the time of the sleep timer comes

Press POWER.

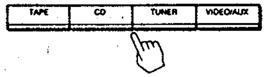
To check the remaining time of the sleep timer

Press SLEEP once, and the remaining time appears.
The display returns to the previous indication in several seconds.





1



2

Microphone Mixing

Mixing Operation A

1 Connect the microphone to MIX MIC jack.

2 Select program source with the function buttons and play it.

3 Sing or speak into the microphone.

4 Adjust the total volume.

When the mixing is over

Be sure to disconnect the microphone.

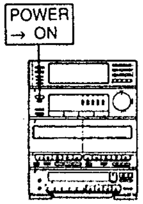
Recording the Sound Mixed with a Source

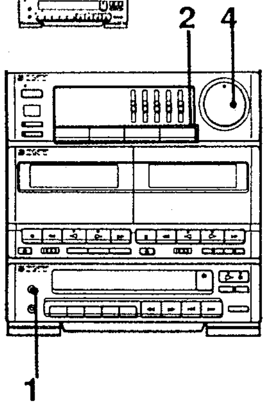
1 Mix the sound as described above.
2 Insert a tape in deck B.
3 Set deck B to the record mode.

Recording from a Microphone Only

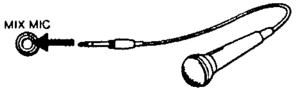
1 Press CD.
2 Press ■ of the CD player.
3 Insert a tape in deck B.
4 While keeping REC pressed, press ▷ or ◁ on deck B.
Recording starts.
5 Speak or sing into the microphone.

To stop howling (acoustic feedback)
Placing the microphone too close to the speakers may cause howling. Move the microphone away from the speakers or change the direction it faces.

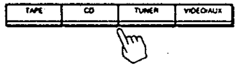




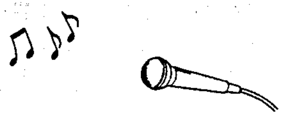
1



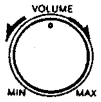
2



3



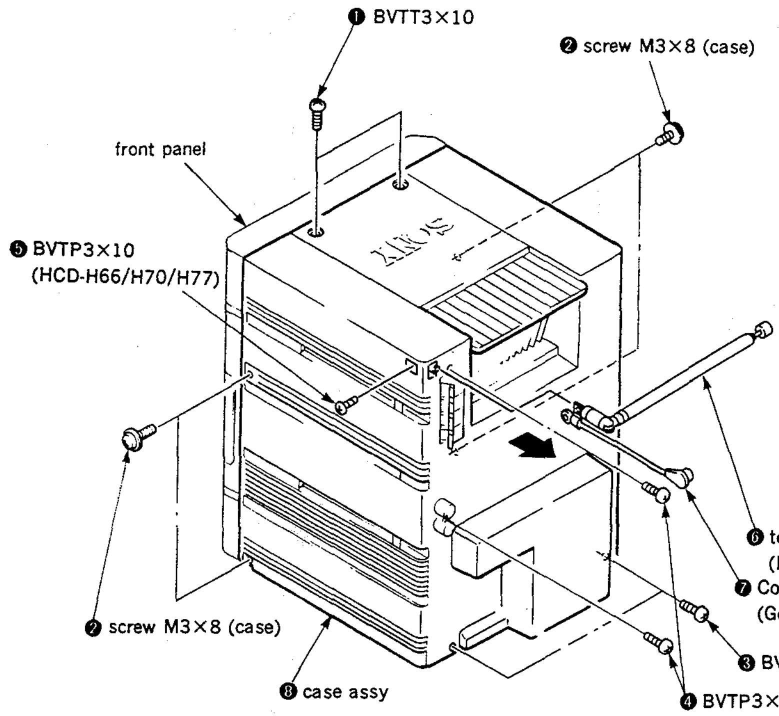
4



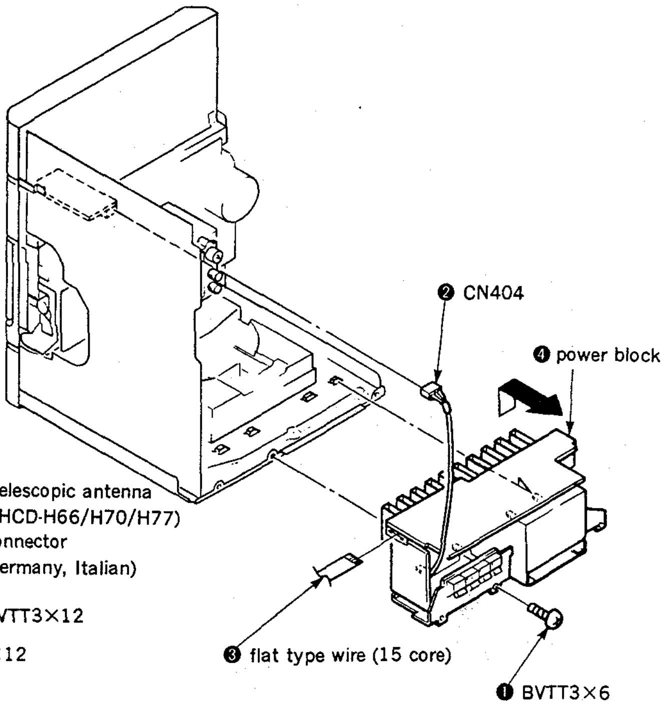
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

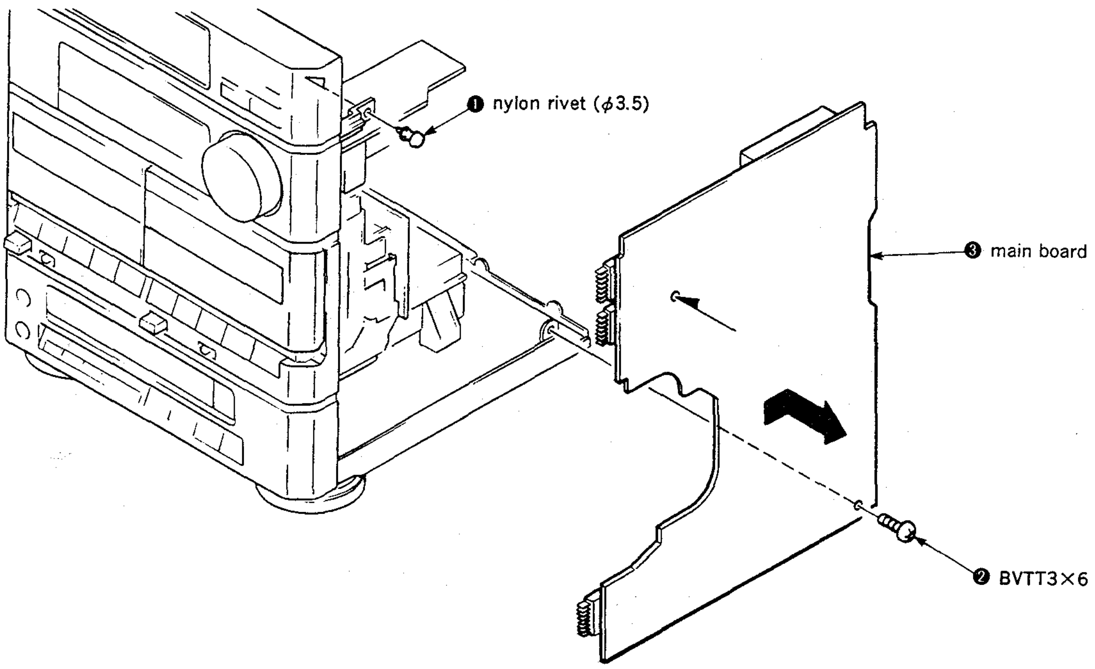
3-1. CASE


❶ BVTT3×10
❷ screw M3×8 (case)
front panel
❺ BVTP3×10
(HCD-H66/H70/H77)
❷ screw M3×8 (case)
❽ case assy
❻ telescopic antenna
(HCD-H66/H70/H77)
❼ Connector
(Germany, Italian)
❸ BVTT3×12
❹ BVTP3×12

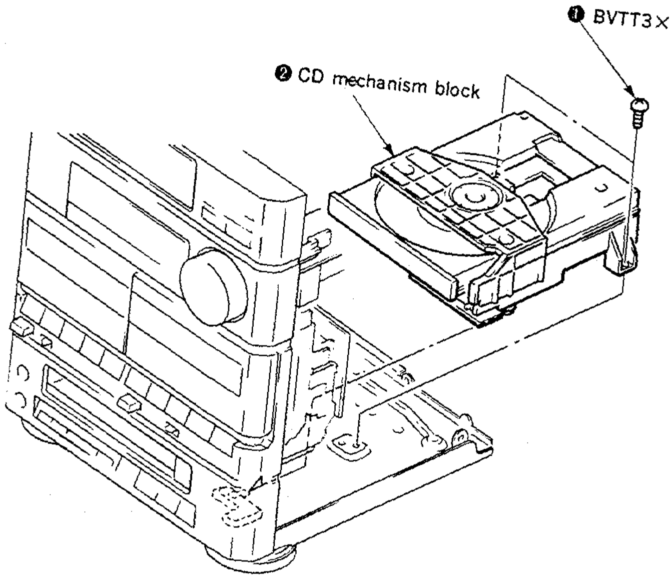
3-2. POWER BLOCK


❷ CN404
❹ power block
❸ flat type wire (15 core)
❶ BVTT3×6

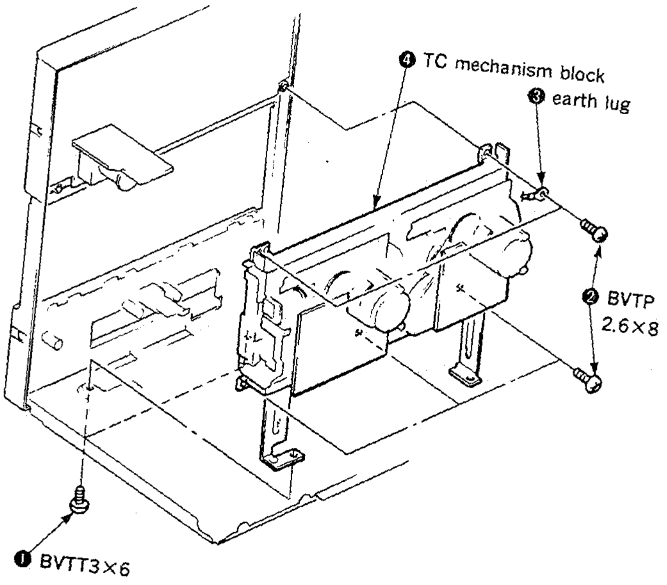
3-3. MAIN BOARD


❶ nylon rivet (φ3.5)
❸ main board
❷ BVTT3×6

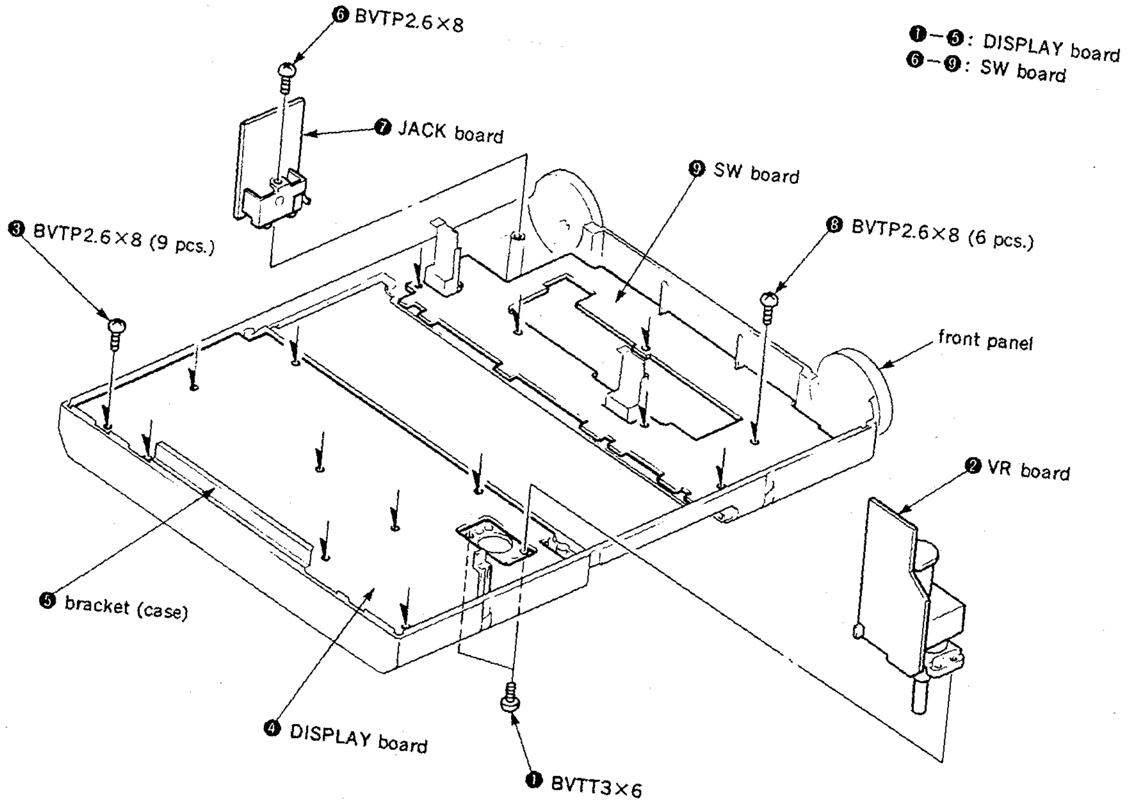
3-4. CD MECHANISM BLOCK


❶ BVTT3×6
❷ CD mechanism block

3-5. TC MECHANISM BLOCK


❹ TC mechanism block
❸ earth lug
❷ BVTP 2.6×8
❶ BVTT3×6

3-6. DISPLAY/SW/JACK/VR BOARD


❻ BVTP2.6×8
❶–❺: DISPLAY board
❻–❾: SW board
❼ JACK board
❾ SW board
❸ BVTP2.6×8 (9 pcs.)
❽ BVTP2.6×8 (6 pcs.)
front panel
❷ VR board
❺ bracket (case)
❹ DISPLAY board
❶ BVTT3×6

SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belt
capstan	idler

2. Demagnetize the record/playback head with a head demagnetizer.
   (Head demagnetizer do not approach for the erase head.)
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustment should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 60g•cm (0.42 to 0.83oz•inch)
Forward back tension	CQ-102C	1 to 5g•cm (0.014 to 0.069oz•inch)
Reverse	CQ-102RB	30 to 60g•cm (0.42 to 0.83oz•inch)
Reverse back tension	CQ-102RB	1 to 5g•cm (0.014 to 0.069oz•inch)
Forward, Reverse	CQ-201B	100 to 170g•cm (1.39 to 2.36oz•inch)

SECTION 5
ELECTRICAL ADJUSTMENTS

DECK SECTION

1. The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
   - Switch position
     DOLBY NR switch: OFF

• Test Tape

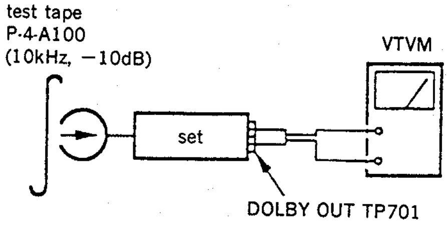
Tape	Contents	Use
P-4-A100	10kH, −10dB	Head Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48A	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

DECK A **DECK B**

Procedure :

1. Forward Playback Mode



• Timer Test Mode

When BAND, SHIFT and PRESET/TIMER+buttons are pressed at the same time the following time test operation is performed. After the operation, it becoms in the system reset mode. Take care that the frequency preset to the tuner is initialized.

1) POWER OFF
2) Timer set

Clock	AM10 : 23
Timer ON	AM10 : 24
Timer OFF	AM10 : 31
Function	TUNER

3) FL tube display (FLT501)

All light
↓ for 2 seconds
"AM 10 : 23"
↓ for 0.5 second
"AM 10 : 24"
↓ for 0.5 second
"TUNER" ←—POWER ON
↓ for 2 seconds
Last channel
↓ for 1 second
"AM 00 : 00" flashing ←—POWER ON

4) Finish

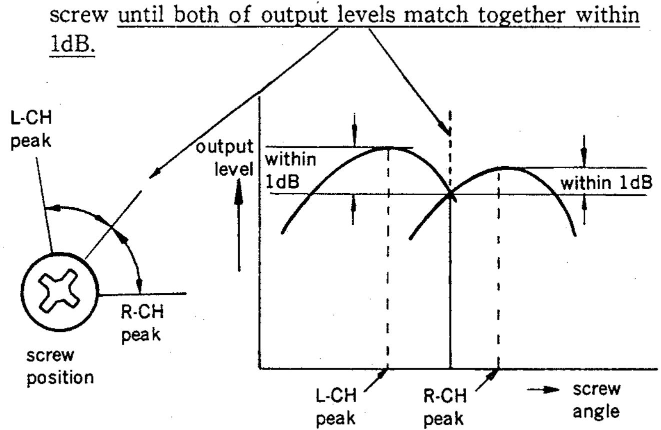
• Preset Frequency in Restting

When pressing the system reset button (S702) of the rear side of the unit, the following frequency is preset to the tuner part. When the system reset is performed in repairing, be sure to return to the frequency set by the user.

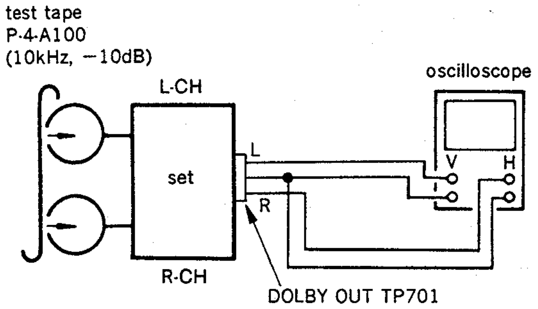
FM		HCD-H66/H77/H1200/H1400 ( ): Italian model			
		MW		LW	
A1	87.5MHz	A6	531(522)kHz	B1	153(144)kHz
A2	88.0MHz	A7	603(522)kHz	B2	162kHz
A3	98.0MHz	A8	999(522)kHz	B3	216kHz
A4	106.0MHz	A9	1040(522)kHz	B4	270kHz
A5	108.0MHz	A0	1602(1611)kHz	B5	279(288)kHz

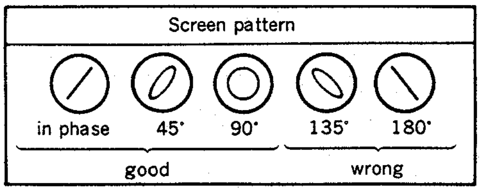
FM		HCD-H70 MWtuning interval : 9k (10k)			
		MW		SW	
A1	87.5MHz	A6	531(530)kHz	B1	5.95MHz
A2	88.0MHz	A7	603(620)kHz	B2	7.00MHz
A3	98.0MHz	A8	999(1050)kHz	B3	12.00MHz
A4	106.0MHz	A9	1404(1490)kHz	B4	17.00MHz
A5	108.0MHz	A0	1602(1710)kHz	B5	17.90MHz

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.


L-CH
peak
output
level
within
1dB
within 1dB
R-CH
peak
screw
position
L-CH
peak
R-CH
peak
screw
angle

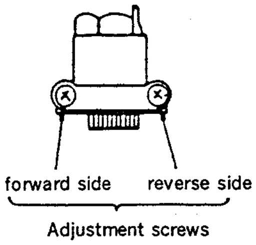
3. Playback Mode

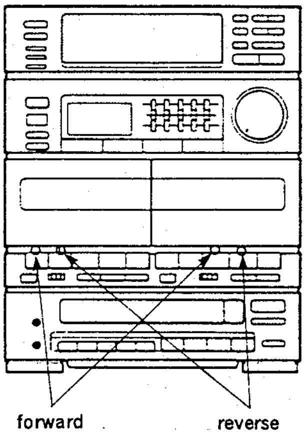

test tape
P-4-A100
(10kHz, −10dB)
L-CH
oscilloscope
set
L
V
H
R
R-CH
DOLBY OUT TP701


Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Change the review playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location :
—record/playback head (deck A and B)


forward side
reverse side
Adjustment screws

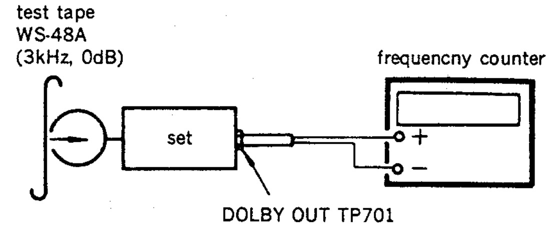

forward
reverse

Tape Speed Adjustment DECK A DECK B

Procedure :

- Perform high speed adjustment before normal speed adjustment.

Mode : playback


test tape
WS-48A
(3kHz, 0dB)
frequencny counter
set
+
−
DOLBY OUT TP701

Speed	Test pin (TP601)	Deck	Adjustment	Frequcency counter
※High	short	A	M1 (H)	5,960 to 6,040Hz
		B	M2 (H)	
Normal	open	A	M1 (L)	2,980 to 3,020Hz
		B	M2 (L)	

※ Continue to press HIGH SPEED DUBBING switch (S312) in playback mode: High speed playback.

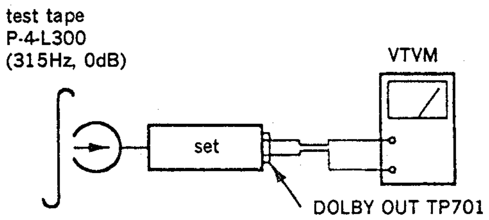
Frequency difference between the begining and the end of the tape should be within ±1.5%.

Adjustment Location : motors (M1 (deck A), M2 (deck B))

Playback Level Adjustment DECK A DECK B

Procedure :

Mode : playback


test tape
P-4-L300
(315Hz, 0dB)
VTVM
set
DOLBY OUT TP701

Deck A is RV41A (L-CH) and RV61A (R-CH), deck B is RV41B (L-CH) and RV61B (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level :
LINE OUT level : −6±0.5dB (0.37 to 0.41V)
Level Difference between Channels : within 1dB

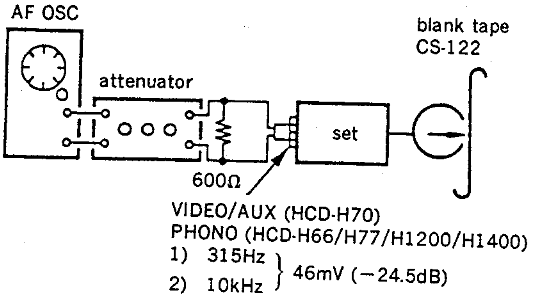
Confirm the DOLBY OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : MD-A and MD-B boards

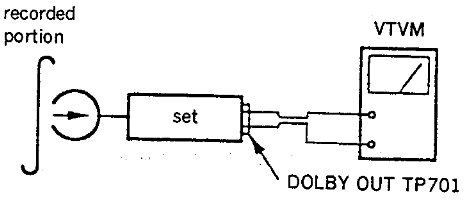
Record Bias Adjustment **DECK B**

Procedure :

1. record mode


AF OSC
attenuator
600Ω
set
blank tape
CS-122
VIDEO/AUX (HCD-H70)
PHONO (HCD-H66/H77/H1200/H1400)
1) 315Hz
2) 10kHz
46mV (−24.5dB)

2. playback mode


recorded portion
set
VTVM
DOLBY OUT TP701

Confirm playback the signal recorded in step 1 become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV42B (deck A) and RV62B (deck B) to repeat step 1 and 2.

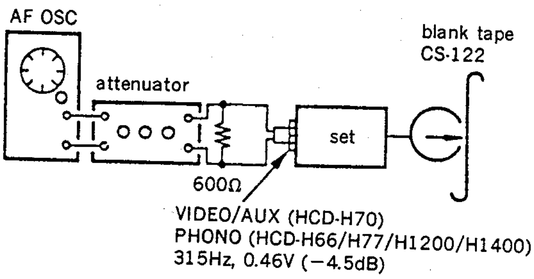
Adjustment level : Playback output of 315Hz to playback output of 10kHz : −0.5dB to 0.5dB

Adjustment Location : MD-B board

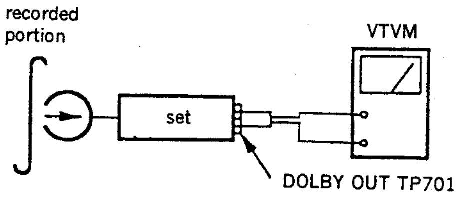
Record Level Adjustment **DECK B**

Procedure :

1. record mode


AF OSC
attenuator
600Ω
set
blank tape
CS-122
VIDEO/AUX (HCD-H70)
PHONO (HCD-H66/H77/H1200/H1400)
315Hz, 0.46V (−4.5dB)

2. playback mode


recorded portion
set
VTVM
DOLBY OUT TP701

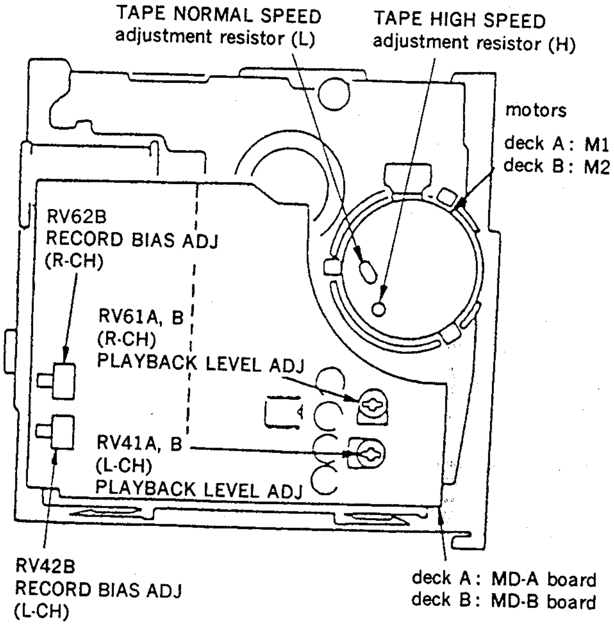
Confirm playback the signal recorded in step become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV701 (deck A) and RV751 (deck B) to repeat step 1 and 2.

Adjustment Level :
LINE OUT level : −6±0.5dB (0.37 to 0.41V)

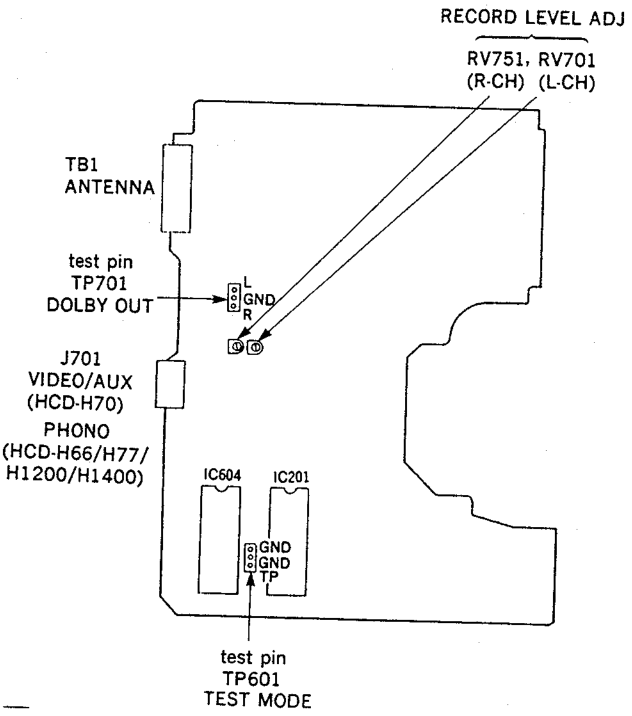
Adjustment Location : main board

Adjustment Location :

mechanism deck—rear side—


TAPE NORMAL SPEED adjustment resistor (L)
TAPE HIGH SPEED adjustment resistor (H)
motors
deck A : M1
deck B : M2
RV62B
RECORD BIAS ADJ
(R-CH)
RV61A, B
(R-CH)
PLAYBACK LEVEL ADJ
RV41A, B
(L-CH)
PLAYBACK LEVEL ADJ
RV42B
RECORD BIAS ADJ
(L-CH)
deck A : MD-A board
deck B : MD-B board

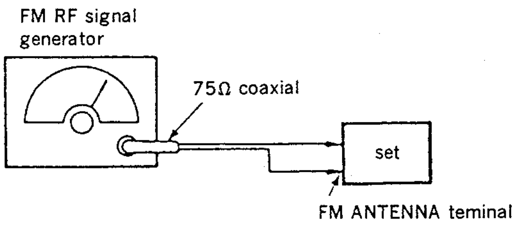
main board —component side—


RECORD LEVEL ADJ
RV751, RV701
(R-CH) (L-CH)
TB1
ANTENNA
test pin
TP701
DOLBY OUT
L
GND
R
J701
VIDEO/AUX
(HCD-H70)
PHONO
(HCD-H66/H77/
H1200/H1400)
IC604
IC201
GND
GND
TP
test pin
TP601
TEST MODE

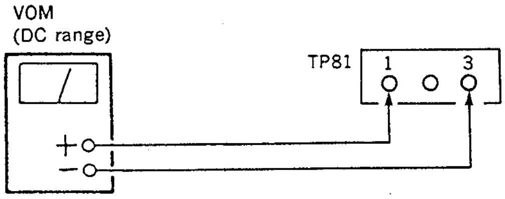
TUNER SECTION

FM SECTION ADJUSTMENTS

Setting :


FM RF signal generator
75Ω coaxial
set
FM ANTENNA teminal

Carrier frequency : 98MHz
Modulation : 1kHz, 75kHz deviation (HCD-H70)
1kHz, 40kHz deviation (HCD-H66/H77/H1200/H1400)


VOM
(DC range)
TP81
1
3
+
−

FM Discriminator Alignment (NULL Check)

Band : FM

Procedure :

1. Supply a 1mV (60dBμ) 98MHz signal from the ANTENNA terminal.
2. Tune the to 98MHz.
3. Adjust IFT82 for 0V reading on the VOM.

Note : FM tuned indication lighting level adjustment should be made after FM discriminator alignment.

FM Tuned Indication Lighting Level Adjustment

Band : FM

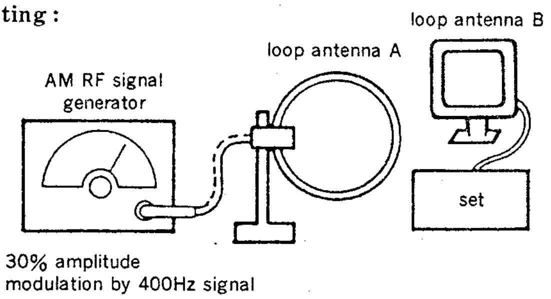
Procedure :

1. Supply a 32μV (30dBμ) 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV81 so that the TUNED light up.

Adjustment Location : main board

AM SECTION ADJUSTMENTS

Setting :


loop antenna B
loop antenna A
AM RF signal generator
set
30% amplitude modulation by 400Hz signal

MW Tuned Indication Lighting Level Adjustment

Band : MW

Procedure :

1. Set loop antenna A so that the loop antenna, B input level becomes 0.45mV (53dBμ)
2. Tune the set to 1,404kHz.
3. Adjust the RV82 so that the TUNED light up.

SW OSC Voltage Adjustment (HCD-H70)

Band : SW

Procedure :

1. Connect the VOM to TP (OSC).
2. Tune the set to 5.95MHz.
3. Adjust T2 for 0.9 to 1.1V reading on the VOM.
4. Tune the set to 17.90MHz.
5. Adjust CT22 for 8.3 to 8.7V reading on the VOM.

SW Tracking Adjustment (HCD-H70)

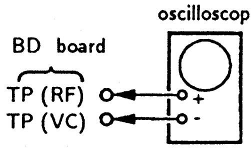
Band : SW

Procedure :

1. Cornect the VOM to speaker terminal.
2. Adjust for a maximam reading on VOM.

Signal generator and Set frequency	Adjustment part
7.0MHz	T1
17.0MHz	CT21

RF Level Check


oscilloscope
BD board
TP (RF)
TP (VC)
+
-

Procedure :

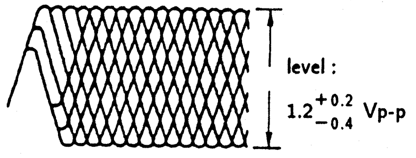
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

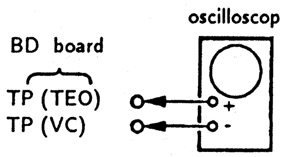
Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform

VOLT/DIV : 200mV
TIME/DIV : 500nS



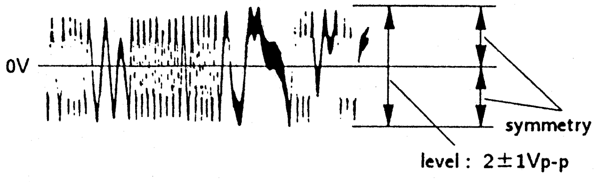
E-F Balance Check


oscilloscope
BD board
TP (TEO)
TP (VC)
+
-

Procedure :

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse oscilloscope

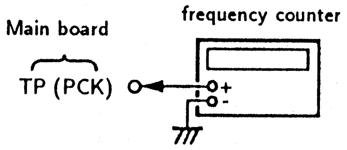


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PCK) with lead wire.


Main board
frequency counter
TP (PCK)
+
-

2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4. 3218MHz.

Focus/Tracking Gain

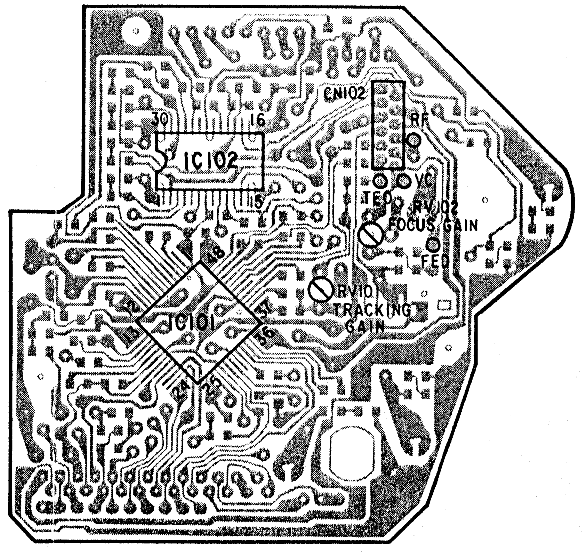
This gain has a margin, so even if it is slightly off. There is no problem.

Therefore, do not perform, this adjustment.

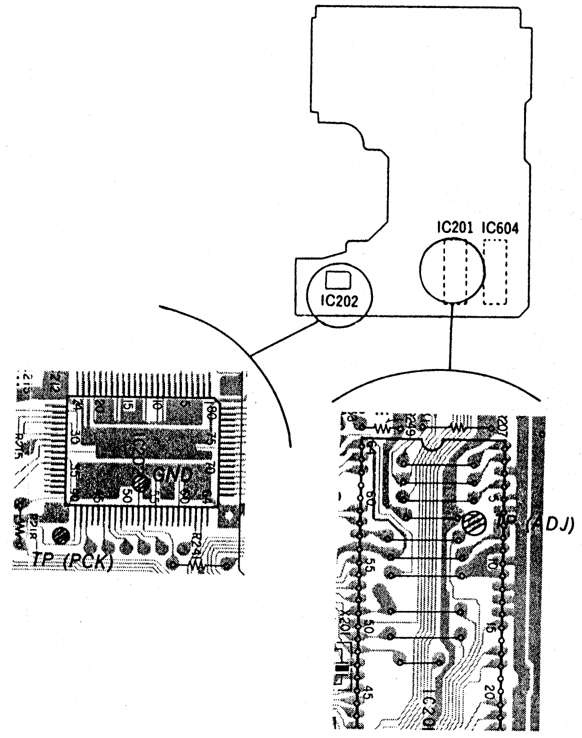
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Locations :

[BD board]


CN102
IC102
RF
VC
TEO
RV102
FOCUS GAIN
FE
RV101
TRACKING GAIN
IC101

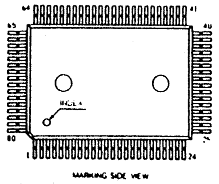
[Main board]


IC201 IC604
IC202
GND
TP (PCK)
(ADJ)

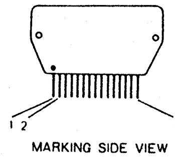
SECTION 6
DIAGRAMS

6-1. SEMICONDUCTOR LEAD LAYOUTS

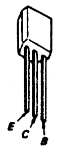
CXA1372Q
CXD2500Q


MARKING SIDE VIEW

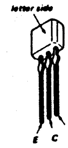
STK-4132MK2


1 2
n
MARKING SIDE VIEW

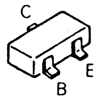
DTA114ES
DTA144ES
DTC114ES
DTC144ES
2SC2603-EF
2SC2724-CD
2SC3622A-LK



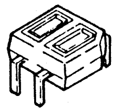
DTC114TS
2SA1175-HFE


letter side
E C B

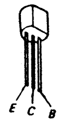
DTC144EK



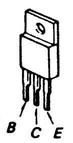
GP-2S09-C



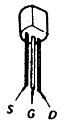
2SB1013-4
2SC3112-B
2SD1616A-K



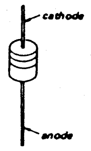
2SB1370-EF
2SC2001-LK
2SD1761-EF



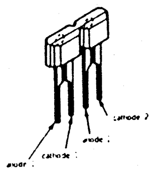
2SK246-GR3
2SK246-Y



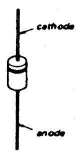
HZS6B1L
HZS7B3L
UZ-3.0BS
UZ-4.7BSC
UZL-24L
UZL-9H1
1SS120
1SS202-1
11ES2


cathode
anode

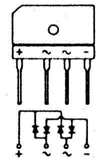
KV1236-Z


cathode
anode

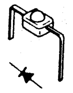
UZP-5.1BC


cathode
anode

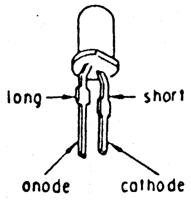
RBA-402



GL-1EG112-CD
GL-1HD112-DE
GL-1HY112-CD

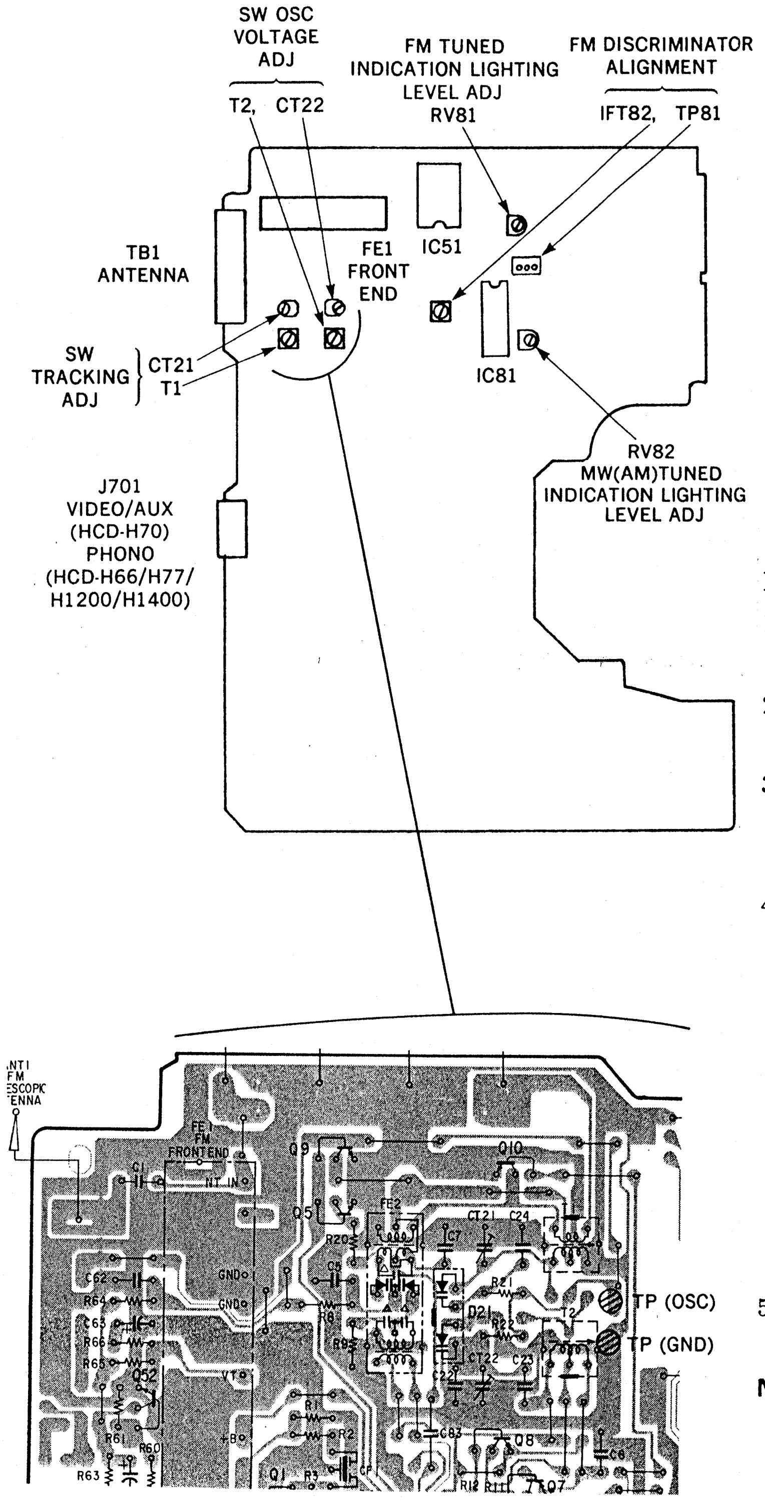


SEL1210RM-LC05-CD
SEL1910DM-LC05-CD


long
short
anode
cathode

6-2. CI

Adjustment Location : main board —component side—

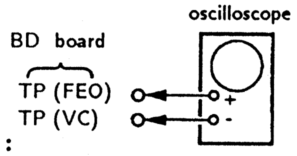

SW OSC VOLTAGE ADJ
T2, CT22
FM TUNED INDICATION LIGHTING LEVEL ADJ
RV81
FM DISCRIMINATOR ALIGNMENT
IFT82, TP81
TB1 ANTENNA
FE1 FRONT END
IC51
SW TRACKING ADJ
CT21
T1
IC81
RV82 MW(AM)TUNED INDICATION LIGHTING LEVEL ADJ
J701 VIDEO/AUX (HCD-H70) PHONO (HCD-H66/H77/ H1200/H1400)
TP (OSC)
TP (GND)

CD SECTION

Note :

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

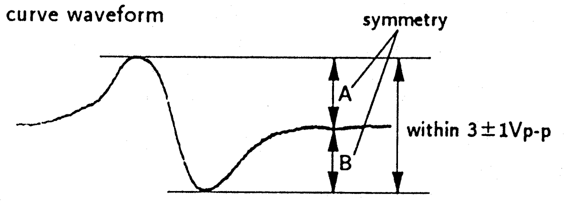
S Curve Check


oscilloscope
BD board
TP (FEO)
TP (VC)
+
-

Procedure :

1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.

S curve waveform


symmetry
A
B
within 3±1Vp-p

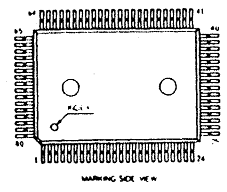
5. After check, remove the lead wire connected in step 2.

Note : • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

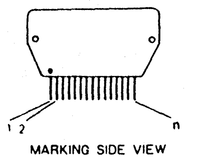
DIAGRAMS

6-1. SEMICONDUCTOR LEAD LAYOUTS

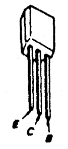
CXA1372Q
CXD2500Q


MARKING SIDE VIEW

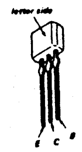
STK-4132MK2


1 2
n
MARKING SIDE VIEW

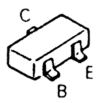
DTA114ES
DTA144ES
DTC114ES
DTC144ES
2SC2603-EF
2SC2724-CD
2SC3622A-LK



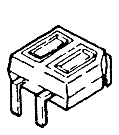
DTC114TS
2SA1175-HFE


letter side
E C B

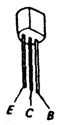
DTC144EK



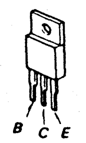
GP-2S09-C



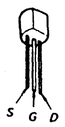
2SB1013-4
2SC3112-B
2SD1616A-K



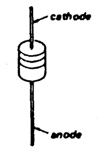
2SB1370-EF
2SC2001-LK
2SD1761-EF



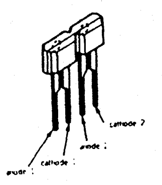
2SK246-GR3
2SK246-Y



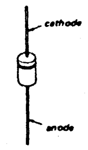
HZS6B1L
HZS7B3L
UZ-3.0BS
UZ-4.7BSC
UZL-24L
UZL-9H1
1SS120
1SS202-1
11ES2


cathode
anode

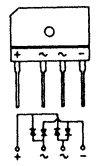
KV1236-Z


anode 2
anode 1
cathode

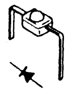
UZP-5.1BC


cathode
anode

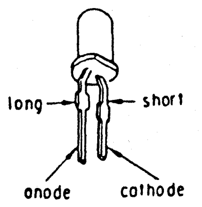
RBA-402



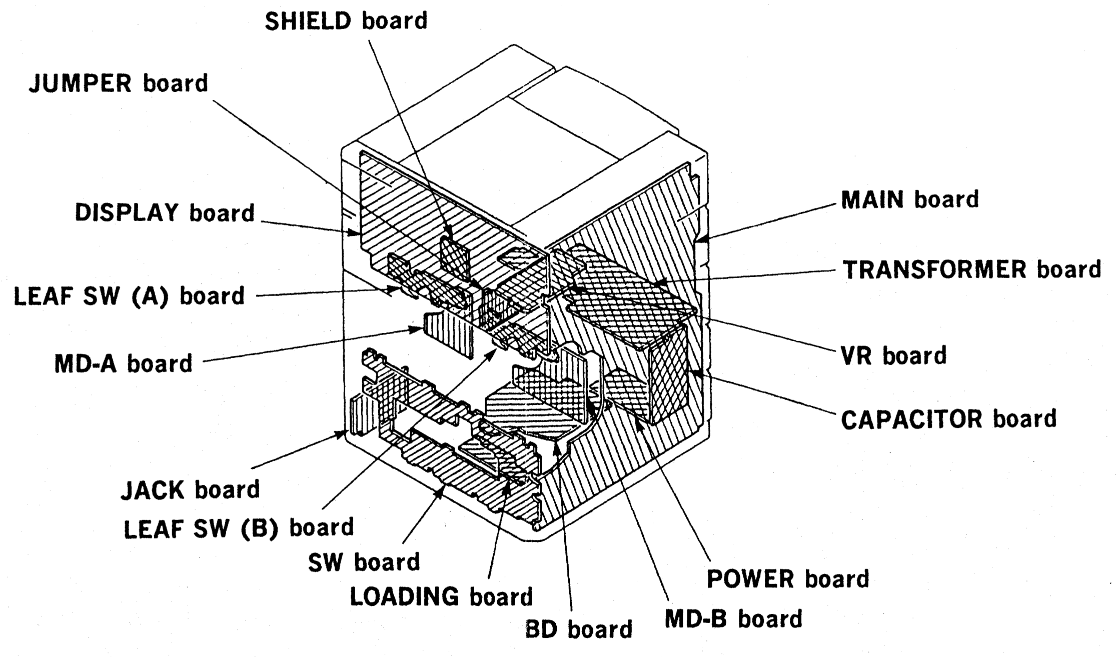
GL-1EG112-CD
GL-1HD112-DE
GL-1HY112-CD



SEL1210RM-LC05-CD
SEL1910DM-LC05-CD


long
short
onode
cathode

6-2. CIRCUIT BOARDS LOCATION


SHIELD board
JUMPER board
DISPLAY board
LEAF SW (A) board
MD-A board
JACK board
LEAF SW (B) board
SW board
LOADING board
BD board
MD-B board
POWER board
CAPACITOR board
VR board
TRANSFORMER board
MAIN board

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D11A	I-13	IC602	C-27	Q231	F-31
D11B	I-7	IC603	E-27	Q232	E-31
D21(*2)	C-24	IC604	C-31	Q233	F-30
D81B	G-2	IC701(*1)	C-20	Q234	E-31
D201	F-30	IC701(*2)	C-26	Q252	E-30
D205	D-29	IC702(*1)	D-20	Q253	E-30
D206	C-13	IC702(*2)	D-26	Q351	D-6
D207	C-13	IC703(*1)	E-20	Q352	C-7
D301	E-8	IC703(*2)	E-26	Q353	C-6
D302	E-8	IC704(*1)	B-20	Q354	D-11
D303	E-12	IC705(*1)	F-20	Q601	E-28
D304	E-12	IC705(*2)	F-26	Q602	B-28
D305	D-7	IC706(*1)	I-18	Q603	E-28
D306	D-8	IC706(*2)	I-24	Q604	B-29
D307	D-9	IC999	H-30	Q605	C-29
D308	D-12			Q606	B-29
D309	D-13	Q1(*1)	D-17	Q607	B-31
D601	E-28	Q1(*2)	D-23	Q608	D-28
D602	C-28	Q2(*3)	D-17	Q609	D-28
D603	D-29	Q3(*1)	E-18	Q610	D-28
D406	B-31	Q3(*2)	E-24	Q611	D-28
D605	D-29	Q4(*1)	D-18	Q612	D-29
D606	C-29	Q4(*2)	D-24	Q613	E-27
D701	B-27	Q5(*1)	B-17	Q614	E-27
D702	B-27	Q5(*2)	B-23	Q615	F-28
D703(*1)	H-19	Q6	E-24	Q616	E-28
D703(*2)	H-25	Q7(*1)	D-18	Q617	C-31
D741(*1)	F-20	Q7(*2)	D-24	Q701(*1)	E-20
D741(*2)	F-26	Q8(*1)	D-18	Q103(*2)	E-26
D742(*1)	G-20	Q8(*2)	D-24	Q741(*1)	G-20
D742(*2)	G-26	Q9(*1)	B-17	Q741(*2)	G-26
D743(*1)	G-20	Q9(*2)	B-23	Q742(*1)	G-20
D743(*2)	G-26	Q11A	I-9	Q742(*2)	G-26
D744(*1)	G-20	Q11B	I-3	Q751(*1)	E-20
D744(*2)	G-26	Q12A	H-12	Q751(*2)	E-26
D745	F-28	Q12B	H-5	Q781(*1)	E-20
D746	E-28	Q51(*1)	D-16	Q781(*2)	E-26
		Q51(*2)	D-22	Q782(*1)	E-20
IC51(*1)	E-16	Q52(*1)	D-16	Q782(*2)	E-26
IC51(*2)	E-22	Q52(*2)	D-22	Q791(*1)	H-19
IC81(*1)	F-18	Q53(*1)	D-15	Q791(*2)	H-25
IC81(*2)	F-24	Q54(*1)	D-15	Q792(*1)	G-19
IC81A	G-9	Q81B	I-2	Q792(*2)	G-25
IC81B	G-3	Q82B	H-2	Q794(*1)	H-18
IC101(BD)	E-34	Q83B	H-2	Q794(*2)	H-24
IC102(BD)	D-34	Q101(*1)	H-16	Q999	G-29
IC201	D-31	Q101(*2)	H-22		
IC202	H-31	Q101(BD)	F-35		
IC221	G-31	Q102(*1)	H-16		
IC222	F-32	Q102(*2)	H-22		
IC223	F-31	Q103(*1)	G-18		
IC253	E-29	Q103(*2)	G-24		
IC601	D-27	Q201	E-29		

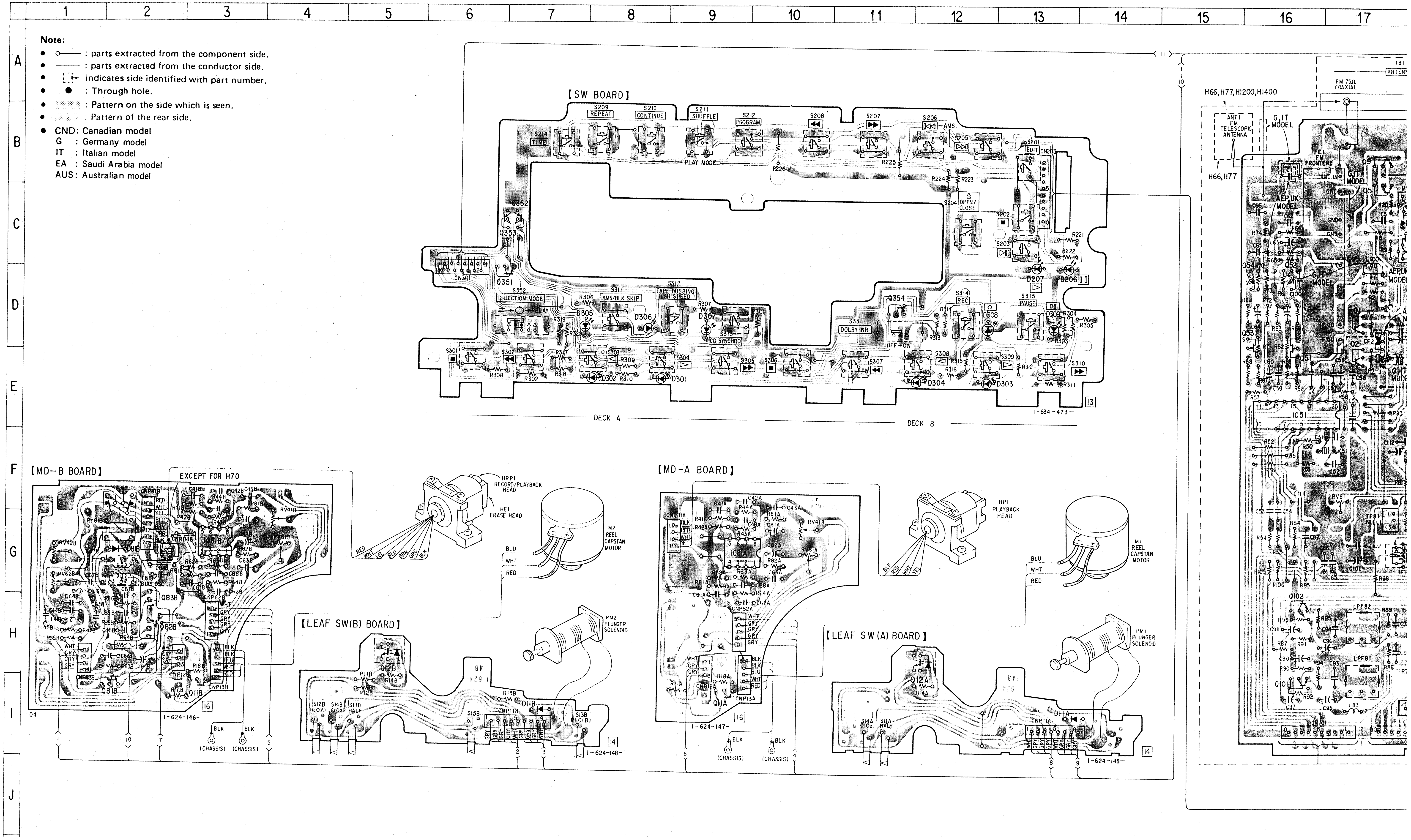
*1: Used on HCD-H66/H77/H1200/H1400.
*2: Used on HCD-H70.
*3: Used on G, IT model.
BD: Used on BD board.

6-3. PRINTED WIRING BOARDS—Tuner/Deck/CD Section—

- Refer to page 29 for Semicondnctor Lead Layouts.
- Refer to page 31 for Semiconductor Location.

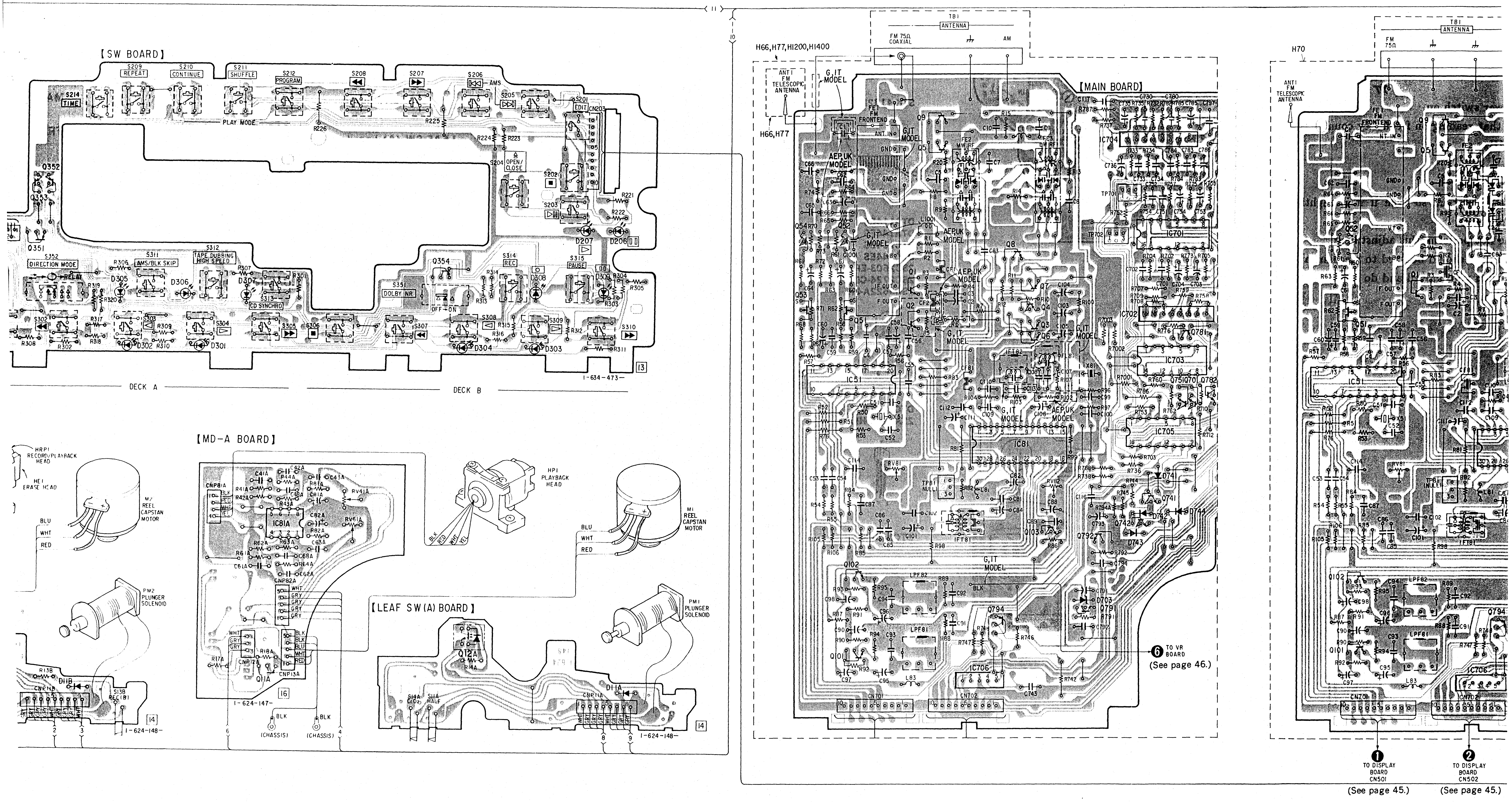
Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ⌐⁝⌐ indicates side identified with part number.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.
- CND: Canadian model
  G : Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model

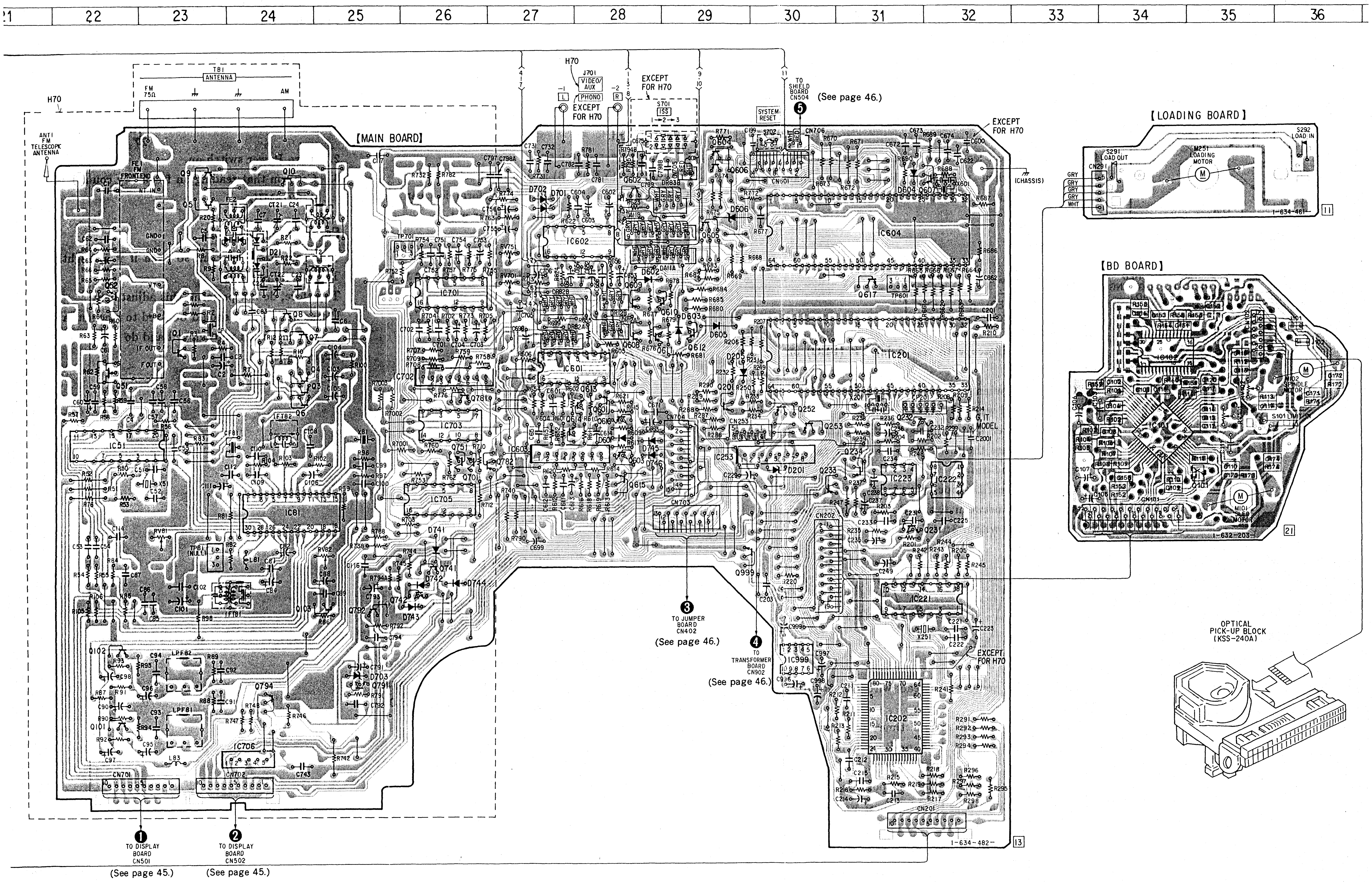

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
H
I
J
【SW BOARD】
S209 REPEAT
S210 CONTINUE
S211 SHUFFLE
S212 PROGRAM
S208
S207
S206
AMS
S205
S201 EDIT
CN203
S214 TIME
PLAY MODE
R226
R225
R224
R223
S204 OPEN/CLOSE
S202
S203
R221
R222
D207
D206
Q352
Q353
CN301
Q351
S352 DIRECTION MODE
RELAY
R306
S311 AMS/BLK SKIP
S312 TAPE DUBBING HIGH SPEED
R307
D305
D306
D307
R301
S313 CD SYNCHRO
S351 DOLBY NR
OFF ON
Q354
S314 REC
R314
R313
D308
S315 PAUSE
D309
R304
R305
R303
S301
S302
R308
R302
R317
R318
R319
R320
S303
R309
D302
R310
S304
D301
S305
S306
S307
S308
R315
R316
D304
S309
R312
D303
S310
R311
13
1-634-473-
DECK A
DECK B
【MD-B BOARD】
EXCEPT FOR H70
C41B
C42B
C43B
R44B
R41B
R42B
R43B
R61B
RV41B
IC61B
CNP81B
CNP82B
RV61B
BIAS OSC
Q83B
Q82B
Q81B
Q11B
CNP12B
CNP13B
R18B
R17B
CNP83B
RED
WHT
YEL
BLU
BRN
ORG
BLK
GRY
16
1-624-146-
04
BLK
(CHASSIS)
HRP1 RECORD/PLAYBACK HEAD
HE1 ERASE HEAD
M2 REEL CAPSTAN MOTOR
PM2 PLUNGER SOLENOID
【LEAF SW(B) BOARD】
Q12B
R11B
R14B
R12B
R13B
D11B
CNP11B
S12B REC(A)
S14B CrO2
S11B HALF
S15B
S13B REC(B)
14
1-624-148-
【MD-A BOARD】
C41A
C42A
C43A
R44A
R41A
R42A
R43A
R61A
RV41A
IC61A
CNP81A
C82A
R82A
RV61A
R62A
R63A
C63A
C68A
C61A
CNP82A
CNP12A
R18A
Q11A
CNP13A
R17A
1-624-147-
HP1 PLAYBACK HEAD
M1 REEL CAPSTAN MOTOR
PM1 PLUNGER SOLENOID
【LEAF SW(A) BOARD】
Q12A
R14A
D11A
CNP11A
S14A CrO2
S11A HALF
1-624-148-
H66,H77,H1200,H1400
ANTI FM TELESCOPIC ANTENNA
G,IT MODEL
H66,H77
TB1 ANTENNA
FM 75Ω COAXIAL
FE1 FM FRONTEND
ANT IN
GND
AEP,UK MODEL
IC51
Q52
Q53
Q54
Q51
Q102
Q101
LPF82
LPF81
CN701
1
2
3
4
5
6
7
8
9
10

Semicondnctor Lead Layouts.
Semiconductor Location.

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

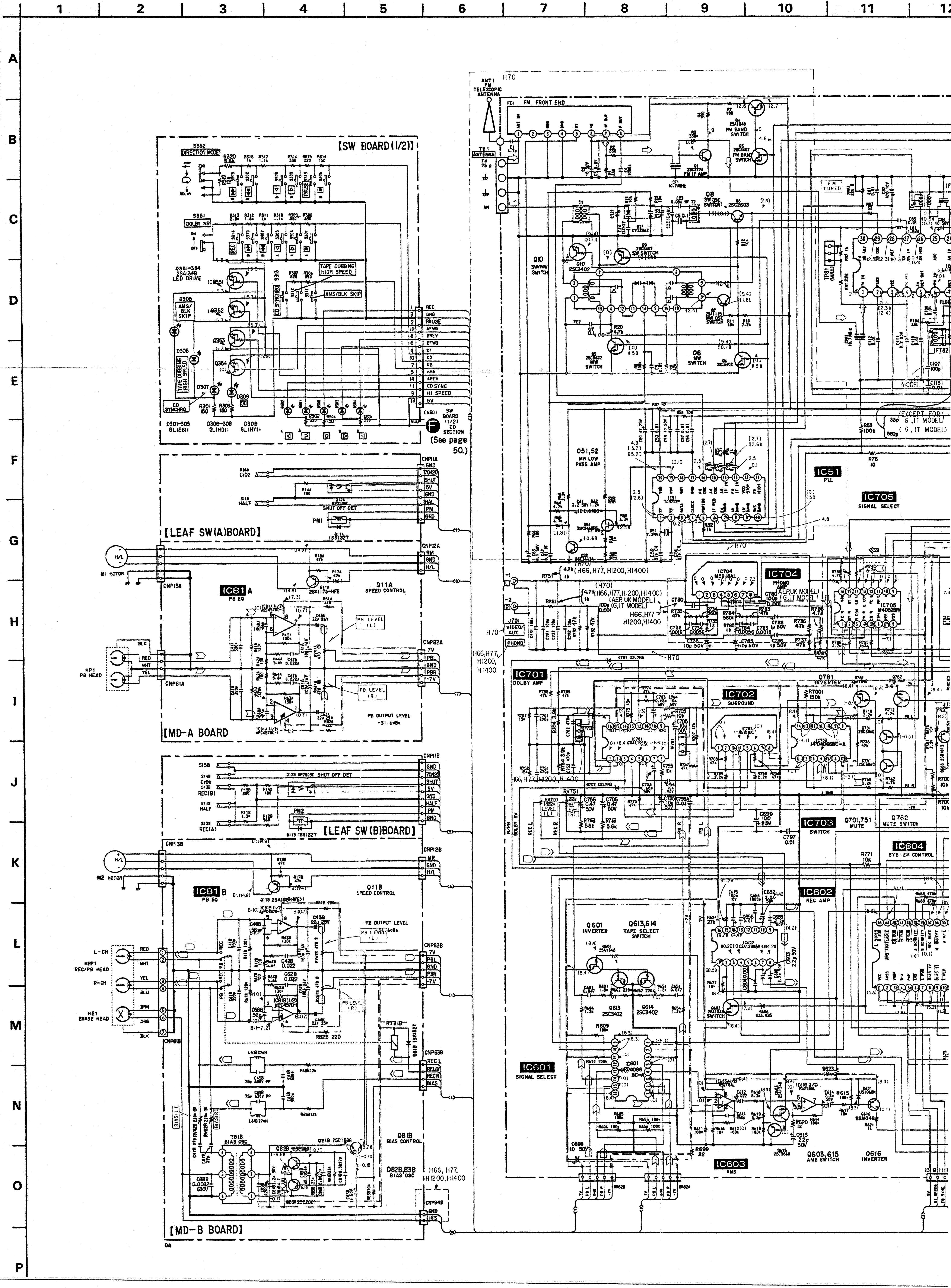


【SW BOARD】
S209 REPEAT
S210 CONTINUE
S211 SHUFFLE
S212 PROGRAM
S208
S207
S206 AMS
S205
S201 EDIT
S214 TIME
PLAY MODE
S204 OPEN/CLOSE
S202
S203
D207
D206
S352 DIRECTION MODE
RELAY
S311 AMS/BLK SKIP
S312 TAPE DUBBING HIGH SPEED
S313 CD SYNCHRO
S351 DOLBY NR
OFF ON
S314 REC
S315 PAUSE
Q352
Q353
Q351
Q354
1-634-473-
13
DECK A
DECK B
HRP1 RECORD/PLAYBACK HEAD
HE1 ERASE HEAD
M2 REEL CAPSTAN MOTOR
BLU
WHT
RED
PM2 PLUNGER SOLENOID
S13B REC(B)
CNP11B
D11B
14
1-624-148-
【MD-A BOARD】
CNP81A
IC81A
CNP82A
CNP12A
CNP13A
Q11A
1-624-147-
16
BLK (CHASSIS)
HP1 PLAYBACK HEAD
M1 REEL CAPSTAN MOTOR
PM1 PLUNGER SOLENOID
【LEAF SW(A) BOARD】
Q12A
S14A
S11A HALF
CNP11A
D11A
1-624-148-
14
H66,H77,H1200,H1400
ANT1 FM TELESCOPIC ANTENNA
H66,H77
TB1 ANTENNA
FM 75Ω COAXIAL
AM
G,IT MODEL
AEP,UK MODEL
FE1 FM FRONTEND
【MAIN BOARD】
IC51
IC81
IC701
IC702
IC703
IC704
IC705
IC706
LPF81
LPF82
IFT81
CN701
CN702
TO VR BOARD
(See page 46.)
H70
ANT1 FM TELESCOPIC ANTENNA
FM 75Ω
TO DISPLAY BOARD CN501
(See page 45.)
TO DISPLAY BOARD CN502
(See page 45.)

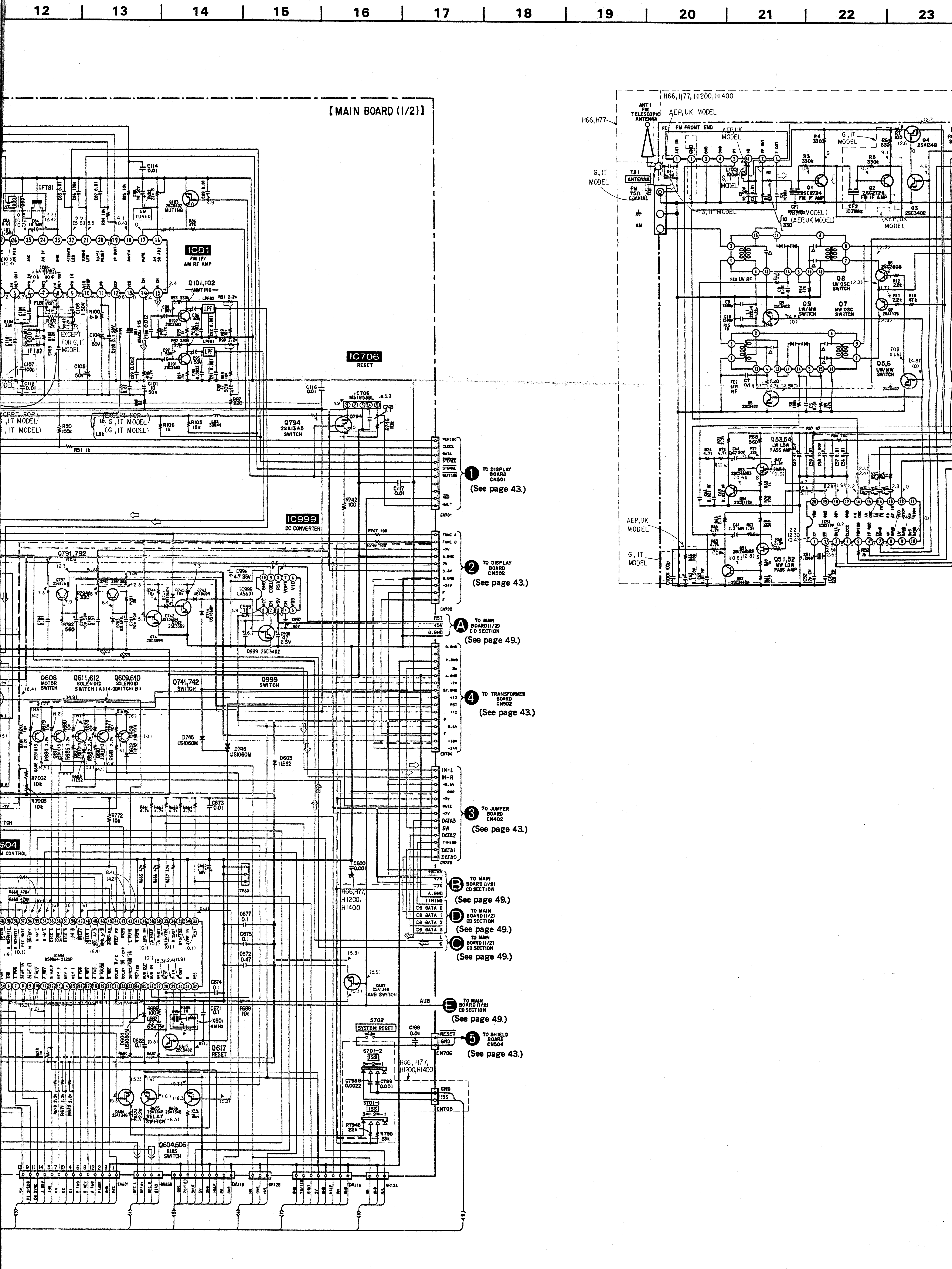

21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
H70
TB1 ANTENNA
FM 75Ω
AM
ANTI FM TELESCOPIC ANTENNA
[MAIN BOARD]
J701 VIDEO/AUX
PHONO
EXCEPT FOR H70
S701 ISS
SYSTEM RESET
TO SHIELD BOARD CN504
⑤ (See page 46.)
(CHASSIS)
[LOADING BOARD]
S291 LOAD OUT
S292 LOAD IN
M251 LOADING MOTOR
CN291
GRY
GRY
GRY
GRY
WHT
1-634-461-
11
[BD BOARD]
M102 SPINDLE MOTOR
S101 LIMIT
M101 SLED MOTOR
CN101
1-632-203-
21
IC101
IC102
OPTICAL PICK-UP BLOCK (KSS-240A)
G.T. MODEL
EXCEPT FOR H70
① TO DISPLAY BOARD CN501 (See page 45.)
② TO DISPLAY BOARD CN502 (See page 45.)
③ TO JUMPER BOARD CN402 (See page 46.)
④ TO TRANSFORMER BOARD CN902 (See page 46.)
IC51
IC81
IC601
IC602
IC604
IC701
IC702
IC703
IC705
IC706
IC201
IC202
IC221
IC222
IC223
IC253
IC999
CN701
CN702
CN703
CN704
CN706
CN201
CN202
CN253
1-634-482-
13

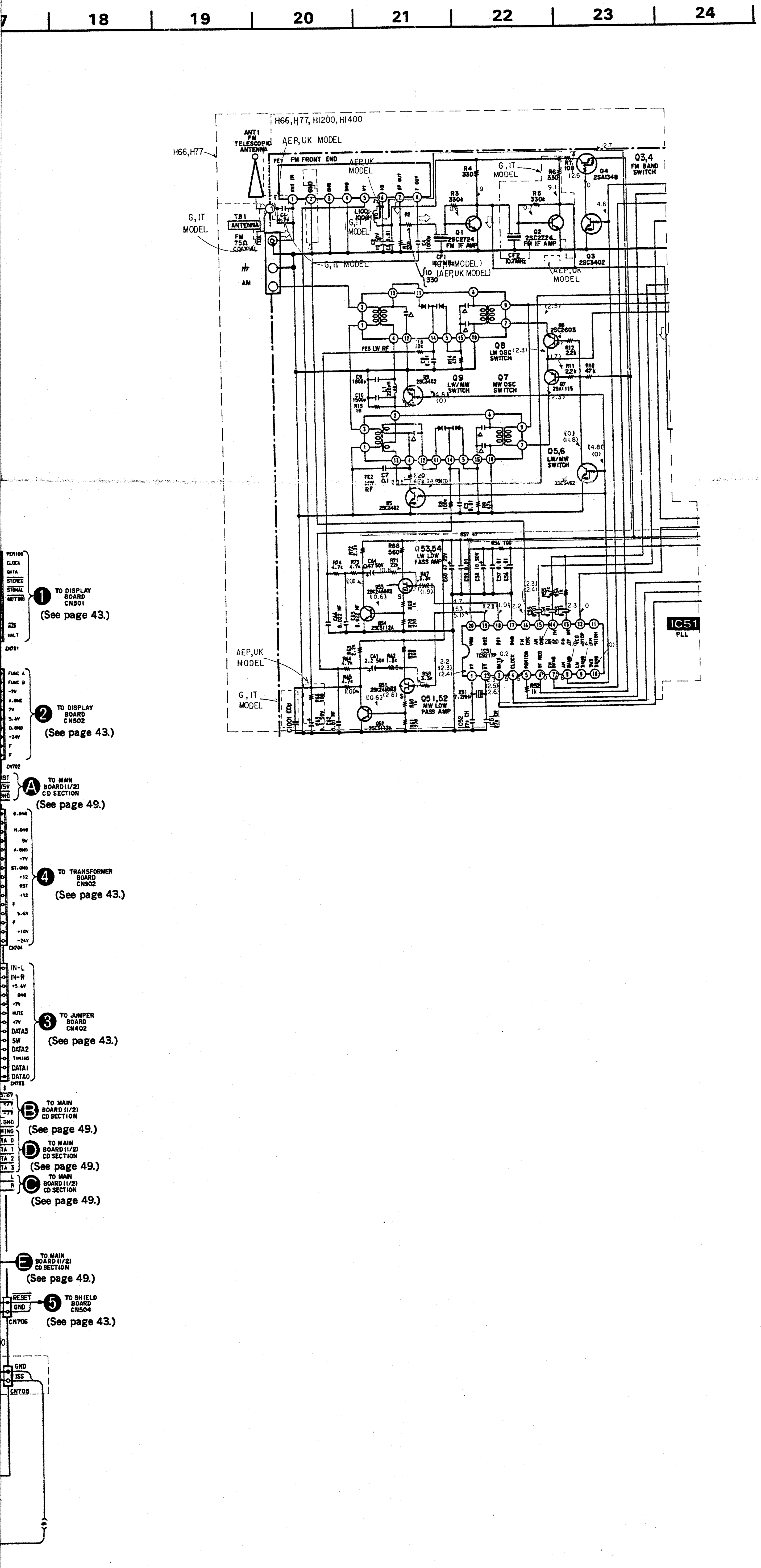
6-4. SCHEMATIC DIAGRAM—Tuner/Deck Section—

- Refer to page 51 for IC Block Diagrams.
- Refer to page 54 for FE1 FM Front End.



[SW BOARD(1/2)]
S352 DIRECTION MODE
S351 DOLBY NR
TAPE DUBBING HIGH SPEED
AMS/BLK SKIP
CD SYNCHRO
Q351-354 2SA1348 LED DRIVE
D301-305 GL1EG11
D306-308 GL1HD11
D309 GL1HY11
CN301
SW BOARD (1/2) CD SECTION (See page 50.)
REC
GND
PAUSE
AFWD
BREV
BFWD
K1
K2
K3
AMS
AREV
CD SYNC
HI SPEED
5V
VDD
[LEAF SW(A)BOARD]
S14A CrO2
S11A HALF
D12A GP2S09C SHUT OFF DET
PM1
D11A 1SS132T
CNP11A
M1 MOTOR
CNP12A
CNP13A
Q11A SPEED CONTROL
IC81 A
PB EQ
PB LEVEL (L)
PB LEVEL (R)
PB OUTPUT LEVEL -31.6dBs
HP1 PB HEAD
CNP81A
CNP82A
[MD-A BOARD]
[LEAF SW(B)BOARD]
CNP11B
CNP12B
CNP13B
M2 MOTOR
Q11B SPEED CONTROL
IC81 B
PB EQ
PB OUTPUT LEVEL
HRP1 REC/PB HEAD
L-CH
R-CH
HE1 ERASE HEAD
CNP81B
CNP82B
CNP83B
CNP84B
RY81B
D81B 1SS132T
T81B BIAS OSC
Q81B BIAS CONTROL
Q82B,83B BIAS OSC
H66, H77, H1200, H1400
[MD-B BOARD]
ANT1 FM TELESCOPIC ANTENNA
TB1 ANTENNA
FM 75Ω
AM
FE1 FM FRONT END
Q1 2SC2724 FM IF AMP
Q4 2SA1348 FM BAND SWITCH
Q5 2SC3402 FM BAND SWITCH
Q8 SW OSC SW(ICR) 2SC2603
Q9 2SC3402 SW SWITCH
Q10 SW/MW SWITCH 2SC3402
Q7 2SA1115 MW OSC SWITCH
Q6 MW SWITCH 2SC3402
Q5 2SC3402 MW SWITCH
Q51,52 MW LOW PASS AMP
IC51 PLL
IC705 SIGNAL SELECT
IC704 M5218AL
IC704 PHONO AMP
H70
J701 VIDEO/AUX
PHONO
IC701 DOLBY AMP
IC702 SURROUND
IC703 SWITCH
Q781 INVERTER
Q701,751 MUTE
Q782 MUTE SWITCH
IC604 SYSTEM CONTROL
IC602 REC AMP
Q601 INVERTER
Q613,614 TAPE SELECT SWITCH
IC601 SIGNAL SELECT
IC603 AMS
Q603,615 AMS SWITCH
Q616 INVERTER
FM TUNED
(EXCEPT FOR G, IT MODEL)
(G, IT MODEL)
(AEP,UK MODEL)


12
13
14
15
16
17
18
19
20
21
22
23
【MAIN BOARD (1/2)】
IC81 FM IF/ AM RF AMP
Q101,102 MUTING
Q103 2SC3402 MUTING
AM TUNED
IFT81
IFT82
EXCEPT FOR G, IT MODEL
IC706 RESET
IC706 M51953BL
Q794 2SA1345 SWITCH
CN701
1 TO DISPLAY BOARD CN501
(See page 43.)
IC999 DC CONVERTER
IC999 LA5601
Q999 2SC3402
Q791,792 REG
2 TO DISPLAY BOARD CN502
(See page 43.)
CN702
A TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
Q608 MOTOR SWITCH
Q611,612 SOLENOID SWITCH (A)
Q609,610 SOLENOID SWITCH (B)
Q741,742 SWITCH
Q999 SWITCH
D745 US1060M
D746 US1060M
D605 1IES2
4 TO TRANSFORMER BOARD CN902
(See page 43.)
CN704
3 TO JUMPER BOARD CN402
(See page 43.)
CN703
604
CONTROL
IC604 M50964-212SP
TP601
C600 0.001
H66, H77, H1200, H1400
B TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
D TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
C TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
Q687 2SA1348 AUB SWITCH
AUB
E TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
X601 4MHz
Q617 RESET
S702 SYSTEM RESET
C199 0.01
CN706
5 TO SHIELD BOARD CN504
(See page 43.)
S701-2 ISS
S701-1 ISS
H66, H77, H1200, H1400
CN705
Q604,606 BIAS SWITCH
Q605 RELAY SWITCH
CN601
CN603
CN618
DA11B
DA11A
CN612
CN612A
H66, H77, H1200, H1400
H66, H77
ANT1 FM TELESCOPIC ANTENNA
AEP, UK MODEL
FM FRONT END
G, IT MODEL
TB1 ANTENNA
FM 75Ω COAXIAL
AM
Q1 2SC2724 FM IF AMP
Q2 2SC2724 FM IF AMP
Q3 2SC3402
Q4 2SA1348
CF1 10.7MHz
CF2 10.7MHz
AEP, UK MODEL
FE3 LW RF
Q8 LW OSC SWITCH
Q6 2SC2603
Q9 LW/MW SWITCH
Q7 MW OSC SWITCH
Q5,6 LW/MW SWITCH
FE2 MW RF
Q53,54 LW LOW PASS AMP
Q51,52 MW LOW PASS AMP
IC51 TC9217P
X51 7.2MHz
AEP, UK MODEL
G, IT MODEL

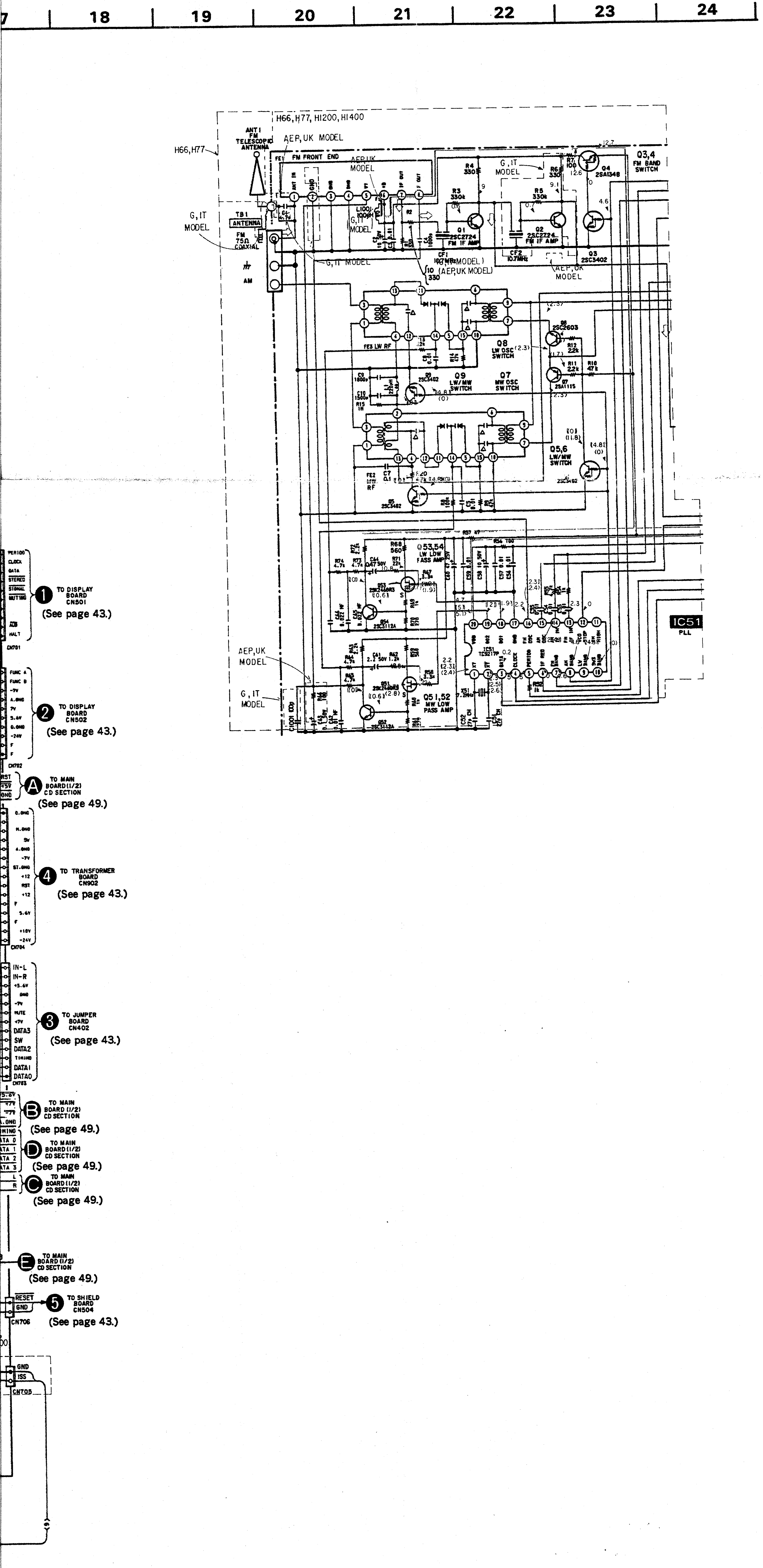

17
18
19
20
21
22
23
24
H66, H77, H1200, H1400
ANT1 FM TELESCOPIC ANTENNA
AEP, UK MODEL
H66, H77
FE1 FM FRONT END
AEP, UK MODEL
G, IT MODEL
TB1 ANTENNA
FM 75Ω COAXIAL
AM
L100 100μH
G, IT MODEL
R4 330
R3 330k
Q1 2SC2724 FM IF AMP
CF1 10.7MHz
(AEP,UK MODEL)
G, IT MODEL
R6 330
R5 330k
R7 100
Q2 2SC2724 FM IF AMP
CF2 10.7MHz
AEP, UK MODEL
Q3,4 FM BAND SWITCH
Q4 2SA1348
Q3 2SC3402
FE3 LW RF
Q8 LW OSC SWITCH
Q9 LW/MW SWITCH
Q7 MW OSC SWITCH
Q6 2SC2603
Q7 2SA1115
Q5,6 LW/MW SWITCH
FE2 MW RF
Q5 2SC3402
Q53,54 LW LOW PASS AMP
Q51,52 MW LOW PASS AMP
IC51 TC9217P
IC51 PLL
X51 7.2MHz
AEP, UK MODEL
G, IT MODEL
1 TO DISPLAY BOARD CN501
(See page 43.)
CN701
2 TO DISPLAY BOARD CN502
(See page 43.)
CN702
A TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
4 TO TRANSFORMER BOARD CN902
(See page 43.)
CN704
3 TO JUMPER BOARD CN402
(See page 43.)
CN703
B TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
D TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
C TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
E TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
5 TO SHIELD BOARD CN504
(See page 43.)
RESET
GND
CN706
GND
ISS
CN705

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- Δ : internal component.
- ⊣∿⊢ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ━━ : B+ Line
- ▬ ▬ : B– Line
- ☐ : adjustment for repair.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : Playback
  < > : MW
  [ ] : LW
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⊳ : PB (DECK A)
  ⇨ : CD
  ▷ : PB (DECK B)
  ▷) : REC
- CND: Canadian model
  G : Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model


17
18
19
20
21
22
23
24
H66, H77, H1200, H1400
ANT1 FM TELESCOPIC ANTENNA
AEP, UK MODEL
H66, H77
FE1 FM FRONT END
G, IT MODEL
TB1 ANTENNA
FM 75Ω COAXIAL
AM
Q1 2SC2724 FM IF AMP
Q2 2SC2724 FM IF AMP
CF1 10.7MHz
CF2 10.7MHz
Q3 2SC3402
Q3,4 FM BAND SWITCH
Q4 2SA1346
FE3 LW RF
Q8 LW OSC SWITCH
Q9 LW/MW SWITCH
Q7 MW OSC SWITCH
Q6 2SC2603
Q5,6 LW/MW SWITCH
FE2 MW RF
Q53,54 LW LOW PASS AMP
Q51,52 MW LOW PASS AMP
IC51 TC9217P
IC51 PLL
AEP, UK MODEL
G, IT MODEL
TO DISPLAY BOARD CN501
(See page 43.)
CN701
TO DISPLAY BOARD CN502
(See page 43.)
CN702
TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
TO TRANSFORMER BOARD CN902
(See page 43.)
CN704
TO JUMPER BOARD CN402
(See page 43.)
CN703
TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
TO MAIN BOARD (1/2) CD SECTION
(See page 49.)
RESET
GND
TO SHIELD BOARD CN504
(See page 43.)
CN706
GND
ISS
CN705

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ━━ : B+ Line
- ━ ━ : B– Line
- ☐ : adjustment for repair.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.

no mark : FM
( ): Playback
< >: MW
[ ]: LW

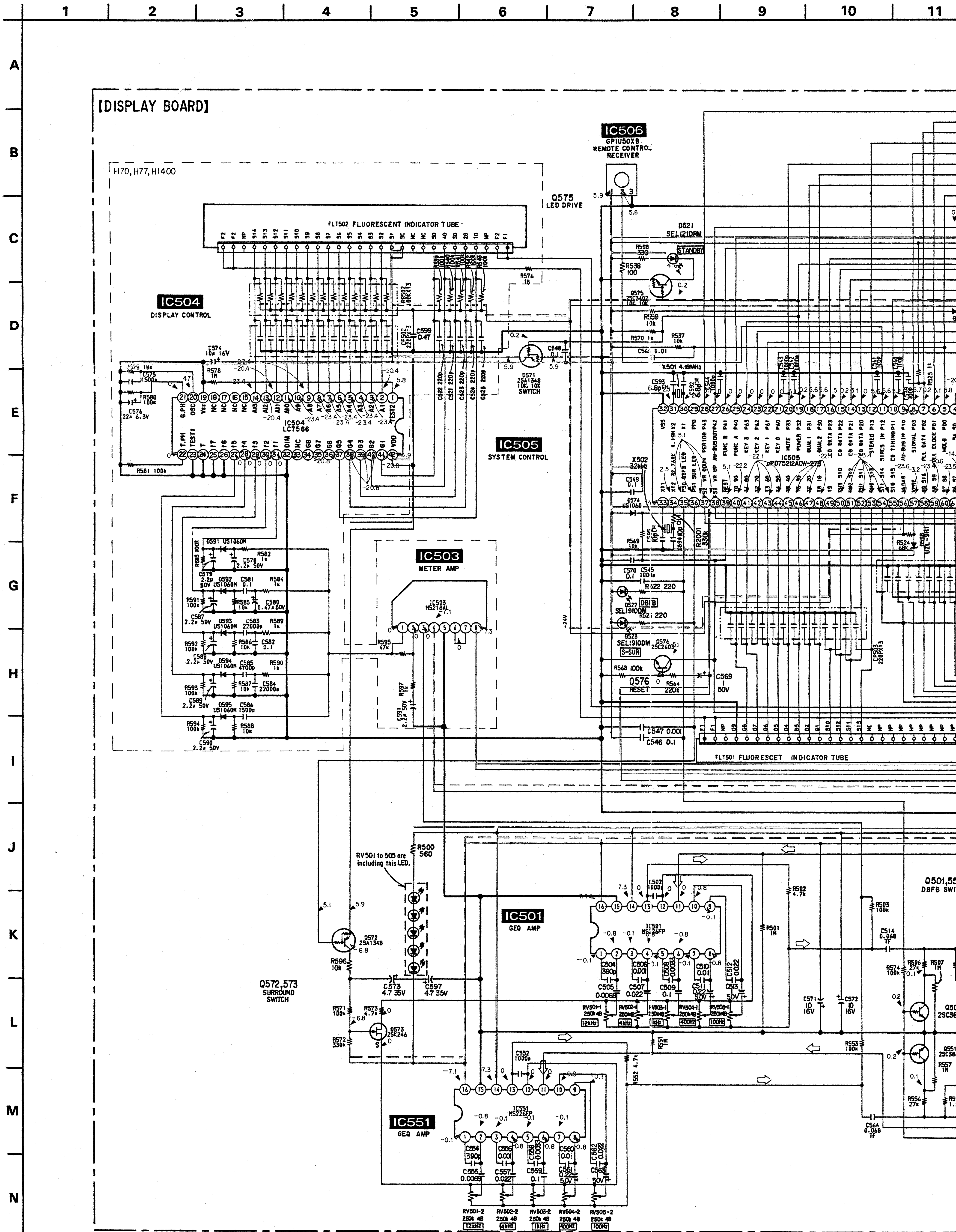
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.

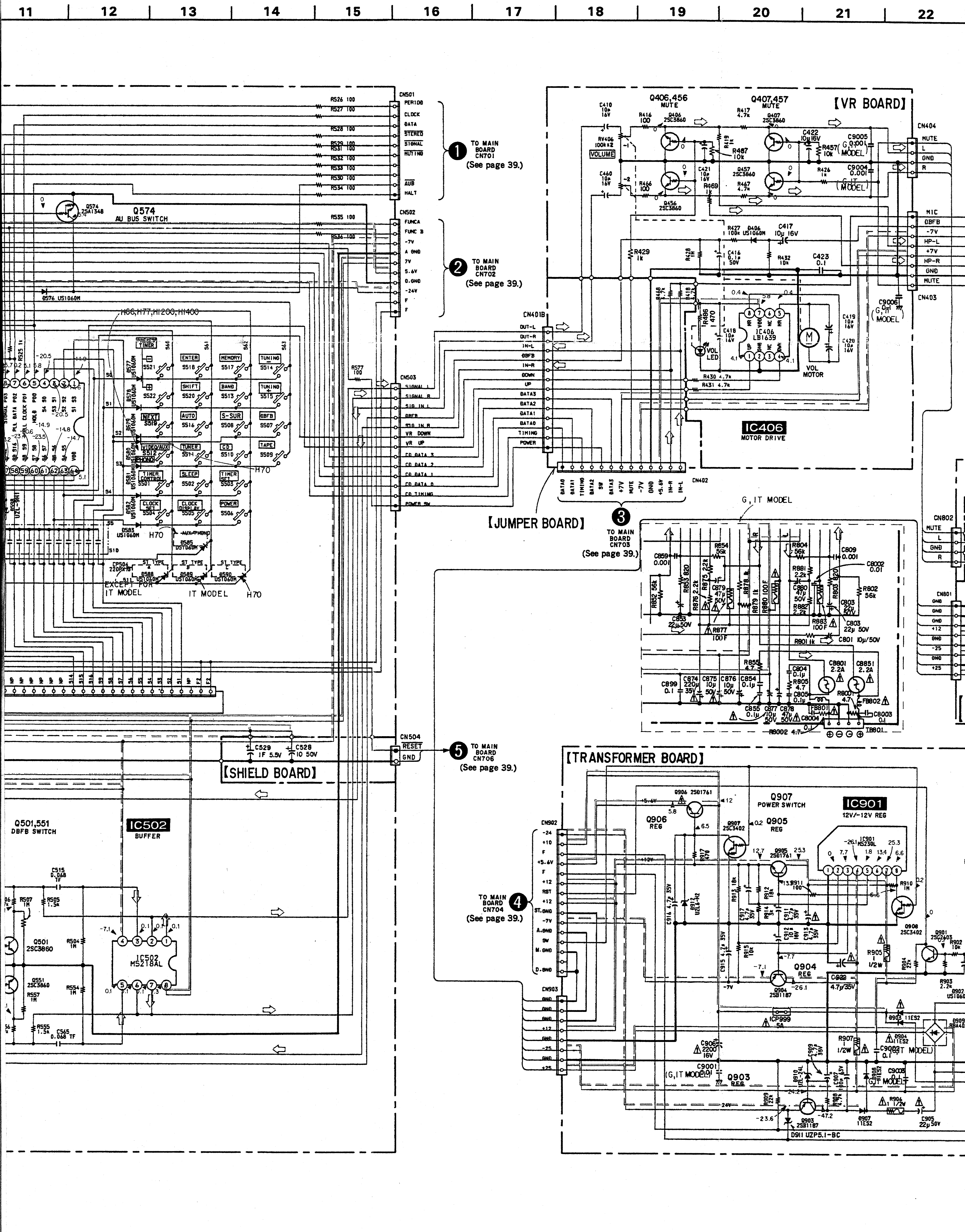
⇨ : FM
: PB (DECK A)
: CD
: PB (DECK B)
: REC

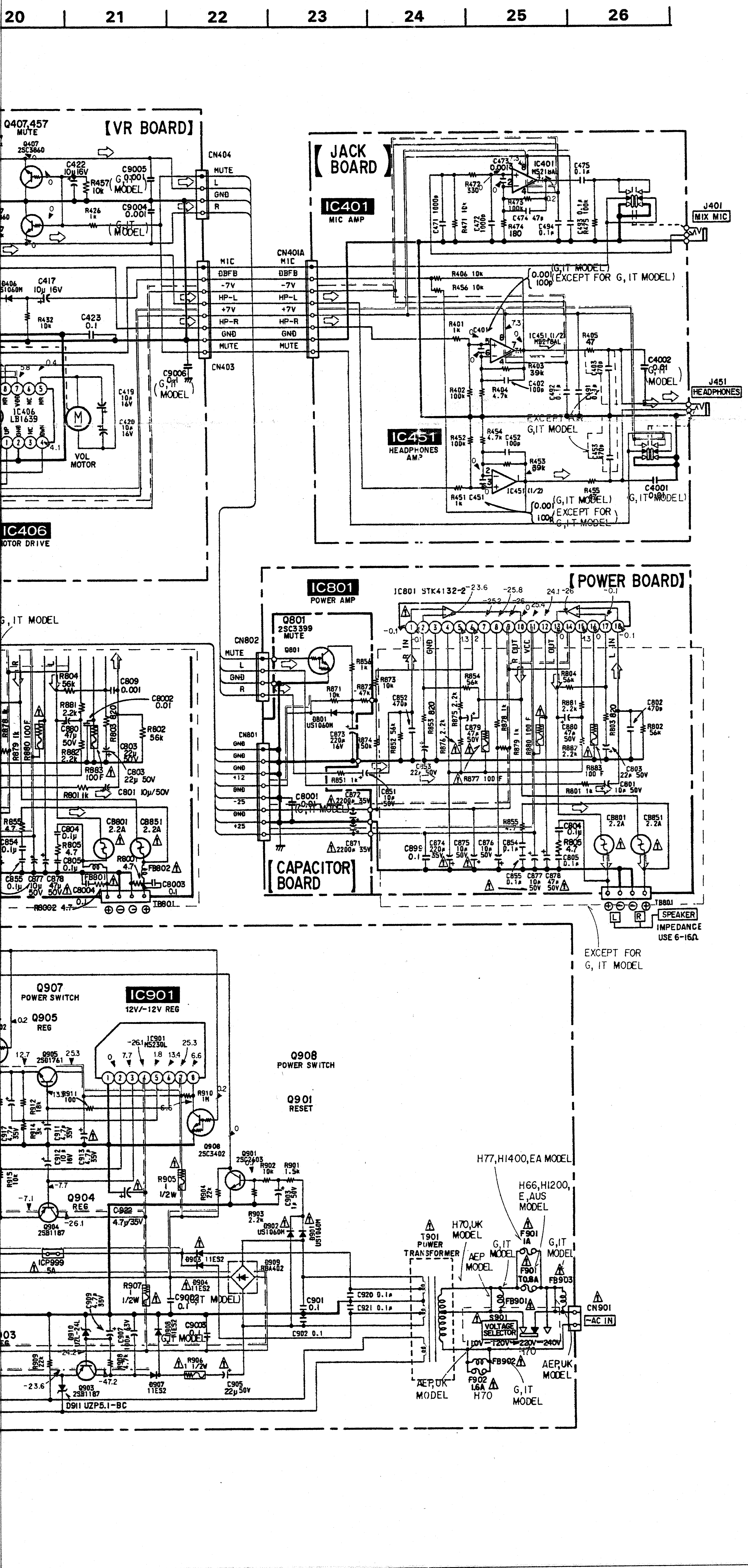
- CND: Canadian model

G : Germany model
IT : Italian model
EA : Saudi Arabia model
AUS: Australian model

6-5. SCHEMATIC DIAGRAM—Power/Amplifier/Display Section— • Refer to page 51 for IC Block Diagrams.


[DISPLAY BOARD]
H70, H77, H1400
IC506
GP1U50XB
REMOTE CONTROL RECEIVER
Q575
LED DRIVE
FLT502 FLUORESCENT INDICATOR TUBE
IC504
DISPLAY CONTROL
IC504
LC7566
D521
SEL1210RM
STANDBY
Q575
2SC3402
Q571
2SA1348
SWITCH
X501 4.19MHz
IC505
SYSTEM CONTROL
IC505
μPD75212ACW-273
X502
32kHz
IC503
METER AMP
IC503
M5218AL
D522
SEL1910DM
DBFB
D523
SEL1910DM
S-SUR
Q576
2SC2603
Q576
RESET
FLT501 FLUORESCENT INDICATOR TUBE
RV501 to 505 are including this LED.
R500
560
Q572
2SA1348
Q572,573
SURROUND SWITCH
Q573
2SK246
IC501
GEQ AMP
IC501
M5226FP
IC551
GEQ AMP
IC551
M5226FP
Q501,55
DBFB SWI
RV501-1 250k 4B 12kHz
RV502-1 250kB 4kHz
RV503-1 250kB 1kHz
RV504-1 250kB 400Hz
RV505-1 250kB 100Hz
RV501-2 250k 4B 12kHz
RV502-2 250k 4B 4kHz
RV503-2 250k 4B 1kHz
RV504-2 250k 4B 400Hz
RV505-2 250k 4B 100Hz
04
1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H I J K L M N O


11
12
13
14
15
16
17
18
19
20
21
22
CN501
PERIOD
CLOCK
DATA
STEREO
SIGNAL
MUTING
AUB
HALT
TO MAIN BOARD CN701 (See page 39.)
CN502
FUNC A
FUNC B
-7V
A GND
7V
5.6V
D.GND
-24V
F
TO MAIN BOARD CN702 (See page 39.)
Q574 AU BUS SWITCH
Q574 2SA1348
D576 US1060M
H66,H77,H1200,H1400
CN503
SIGNAL L
SIGNAL R
SIG IN L
DBFB
SIG IN R
VR DOWN
VR UP
CD DATA 3
CD DATA 2
CD DATA 1
CD DATA 0
CD TIMING
POWER SW
PRESET TIMER
ENTER
MEMORY
TUNING
SHIFT
BAND
NEXT
AUTO
S-SUR
DBFB
VIDEO/AUX/PHONO
TUNER
CD
TAPE
TIMER CONTROL
SLEEP
TIMER SET
CLOCK SET
CLOCK DISPLAY
POWER
EXCEPT FOR IT MODEL
IT MODEL
H70
ST TYPE
CN401B
OUT-L
OUT-R
IN-L
DBFB
IN-R
DOWN
UP
DATA3
DATA2
DATA1
DATA0
TIMING
POWER
CN402
【JUMPER BOARD】
TO MAIN BOARD CN703 (See page 39.)
CN504
RESET
GND
C529 1F 5.5V
C528 10 50V
【SHIELD BOARD】
TO MAIN BOARD CN706 (See page 39.)
Q501,551 DBFB SWITCH
IC502 BUFFER
IC502 M5218AL
Q501 2SC3860
Q551 2SC3860
Q406,456 MUTE
Q407,457 MUTE
【VR BOARD】
RV406 100k×2 VOLUME
CN404
MUTE
L
GND
R
(G,IT MODEL)
MIC
DBFB
-7V
HP-L
+7V
HP-R
GND
MUTE
CN403
IC406 LB1639
VOL LED
VOL MOTOR
IC406 MOTOR DRIVE
G, IT MODEL
CN802
CN801
【TRANSFORMER BOARD】
Q907 POWER SWITCH
Q906 REG
Q905 REG
IC901 12V/-12V REG
IC901 M5230L
CN902
-24
+10
F
+5.6V
+12
RST
ST.GND
-7V
A.GND
SW
M.GND
D.GND
TO MAIN BOARD CN704 (See page 39.)
CN903
+12
-25
+25
Q904 REG
Q904 2SB1187
Q903 REG
Q903 2SB1187
ICP999 5A
D911 UZP5.1-BC
(G,IT MODEL)

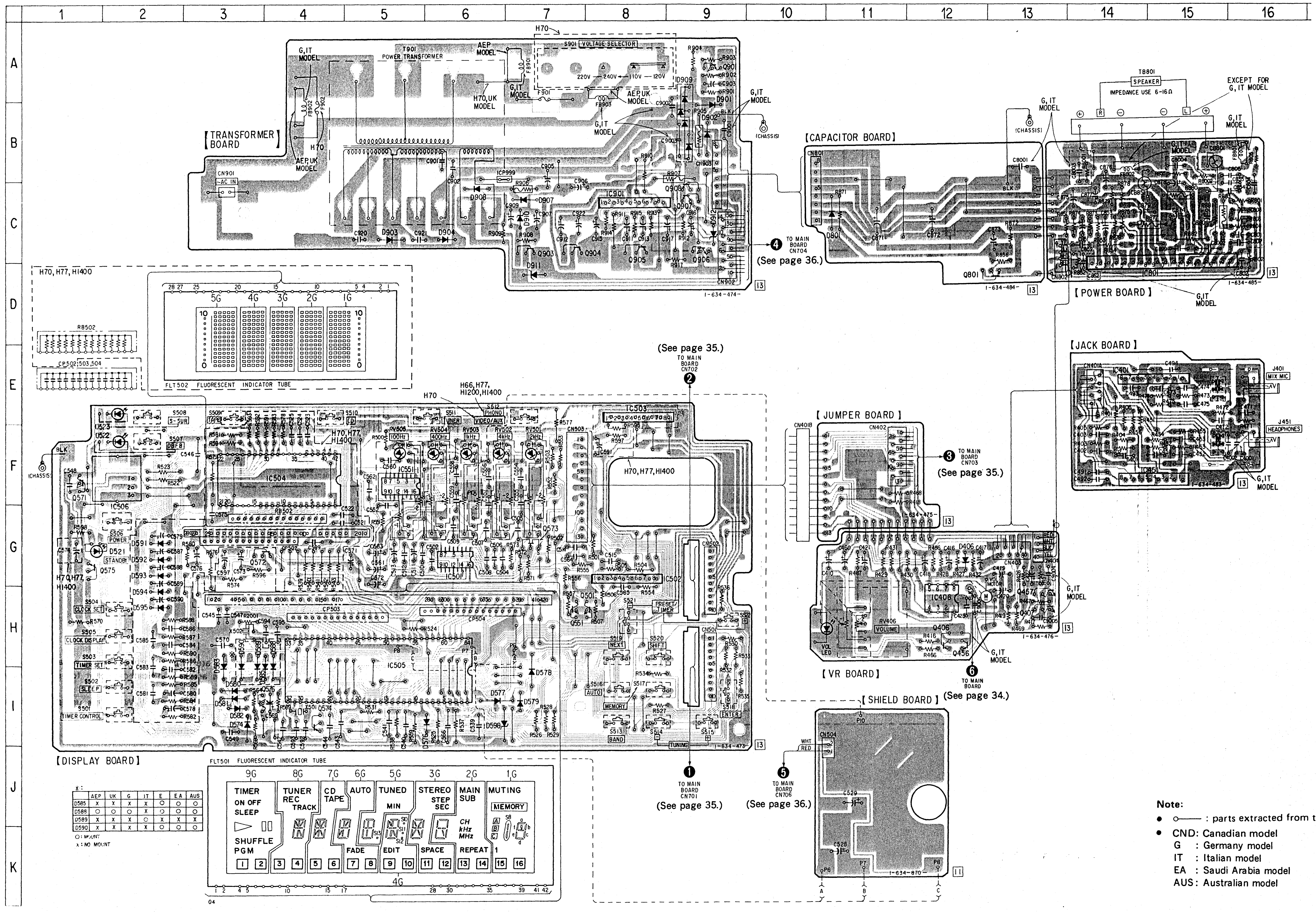

20
21
22
23
24
25
26
【VR BOARD】
Q407,457 MUTE
CN404
MUTE
L
GND
R
IC406 MOTOR DRIVE
IC406 LB1639
VOL MOTOR
CN403
CN401A
MIC
DBFB
-7V
HP-L
+7V
HP-R
GND
MUTE
【JACK BOARD】
IC401
MIC AMP
IC401 M5218AL
J401
MIX MIC
IC451
HEADPHONES AMP
IC451 (1/2) M5218AL
J451
HEADPHONES
(G, IT MODEL)
(EXCEPT FOR G, IT MODEL)
EXCEPT FOR G, IT MODEL
IC801
POWER AMP
IC801 STK4132-Ⅱ
【POWER BOARD】
Q801 2SC3399 MUTE
CN802
CN801
【CAPACITOR BOARD】
TB801
SPEAKER
IMPEDANCE USE 6-16Ω
EXCEPT FOR G, IT MODEL
G, IT MODEL
Q907 POWER SWITCH
Q905 REG
IC901
12V/-12V REG
IC901 M5230L
Q908 POWER SWITCH
Q901 RESET
Q904 REG
Q908 2SC3402
Q901 2SC2603
Q903 2SB1187
D911 UZP5.1-BC
D909 RBA402
ICP999 5A
T901 POWER TRANSFORMER
H77,H1400,EA MODEL
H66,H200, E,AUS MODEL
H70,UK MODEL
AEP MODEL
G, IT MODEL
F901 1A
F901 T0.8A
FB901
FB902
FB903
S901 VOLTAGE SELECTOR
110V-120V-220V-240V
F902 1.6A H70
AEP,UK MODEL
CN901
AC IN

Note:
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ━━ : B+ Line
- ━ ━ : B– Line
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
  no mark : POWER ON
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- **Signal path.**
  ⇨ : FM
- CND: Canadian model
  G : Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model

6-6. PRINTED WIRING BOARDS—Power/Amplifier/Display Section— • Refer to page 29 for Semiconductor Lead Layouts.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J K
[TRANSFORMER BOARD]
T901 POWER TRANSFORMER
S901 VOLTAGE SELECTOR
220V 240V 110V 120V
G,IT MODEL
AEP MODEL
H70,UK MODEL
AEP,UK MODEL
CN901 AC IN
(CHASSIS)
TO MAIN BOARD CN704
(See page 36.)
[CAPACITOR BOARD]
TB801 SPEAKER
IMPEDANCE USE 6-16Ω
EXCEPT FOR G,IT MODEL
[POWER BOARD]
[JACK BOARD]
J401 MIX MIC
J451 HEADPHONES
[JUMPER BOARD]
TO MAIN BOARD CN703
(See page 35.)
TO MAIN BOARD CN702
(See page 35.)
H70,H77,H1400
FLT502 FLUORESCENT INDICATOR TUBE
H66,H77, H1200,H1400
[VR BOARD]
RV406 VOLUME
TO MAIN BOARD
(See page 34.)
[SHIELD BOARD]
[DISPLAY BOARD]
FLT501 FLUORESCENT INDICATOR TUBE
TO MAIN BOARD CN701
(See page 35.)
TO MAIN BOARD CN706
(See page 36.)
TIMER ON OFF SLEEP
TUNER REC TRACK
CD TAPE
AUTO
TUNED MIN
STEREO STEP SEC
MAIN SUB
MUTING MEMORY
SHUFFLE PGM
FADE EDIT SPACE REPEAT
CH kHz MHz
S508 S-SUR
S507 DBFB
S506 POWER
STANDBY
S504 CLOCK SET
S505 CLOCK DISPLAY
S503 TIMER SET
S502 SLEEP
S501 TIMER CONTROL
S511 TUNER
S512 PHONO
VIDEO/AUX
S510 CD
S509 TAPE
100Hz 400Hz 1kHz 4kHz 12kHz
S519 NEXT
S520 SHIFT
S521 PRESET/TIMER
S516 AUTO
S517 MEMORY
S513 BAND
S514 TUNING
S515
S518 ENTER
1-634-474-
1-634-484-
1-634-485-
1-634-475-
1-634-476-
1-634-473-
1-634-870-

x:

	AEP	UK	G	IT	E	EA	AUS
D585	X	X	X	X	○	○	○
D588	○	○	○	X	○	○	○
D589	X	X	X	○	X	X	X
D590	X	X	X	X	○	○	○

○: MOUNT
x: NO MOUNT

Note:

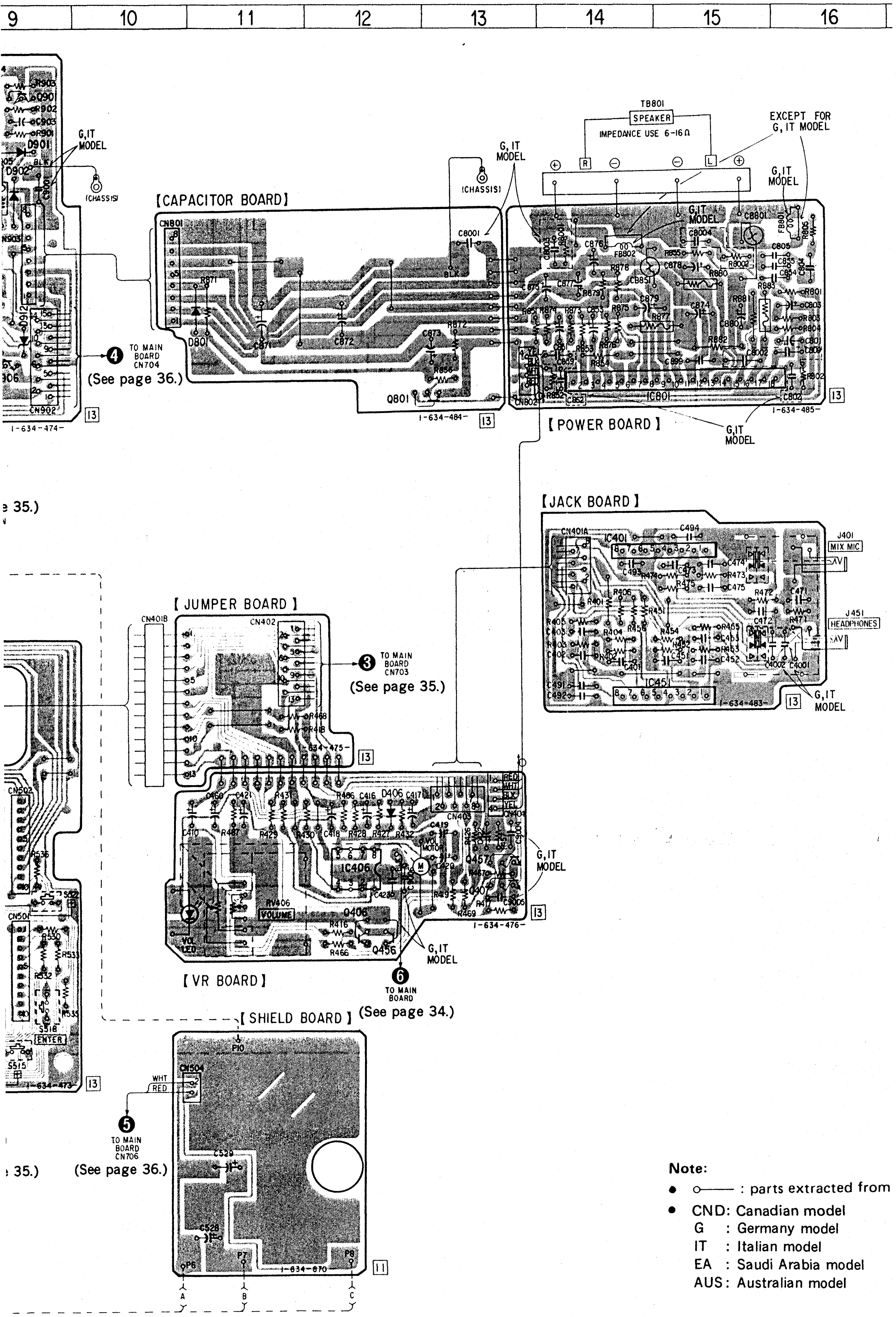
- ○—— : parts extracted from the component side.
- CND: Canadian model
  G : Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model

• Semiconductor Location

Ref. No.	Location	Ref. No.
D406	G-12	IC451
D521	G-2	IC501
D522	F-2	IC502
D523	E-2	IC503(*4
D574	I-3	IC504(*4
D576	I-6	IC505
D577	I-6	IC506
D578	I-7	IC551
D579	I-7	IC801
D580	I-3	IC901
D581	I-3	
D582	I-3	Q406
D583	H-3	Q407
D585(*1)	H-4	Q456
D588(*2)	H-4	Q457
D589(*3)	H-3	Q501
D590(*1)	H-3	Q551
D591(*4)	G-2	Q571
D592(*4)	G-2	Q572
D593(*4)	G-2	Q573
D594(*4)	G-2	Q574
D595(*4)	H-2	Q575
D598	I-6	Q576
D801	C-11	Q801
D901	A-9	Q901
D902	B-9	Q903
D903	C-5	Q904
D904	C-6	Q905
D907	C-7	Q906
D908	C-6	Q907
D909	A-9	Q908
D910	C-7	
D911	D-7	
D912	C-9	
IC401	E-14	
IC406	H-12	

*1: Used on HCD-H70.
*2: Used on except for IT model.
*3: Used on IT model.
*4: Used on HCD-H70/H77/H1400

d Layouts.


9
10
11
12
13
14
15
16
[CAPACITOR BOARD]
[POWER BOARD]
[JACK BOARD]
[JUMPER BOARD]
[VR BOARD]
[SHIELD BOARD]
TB801
SPEAKER
IMPEDANCE USE 6-16Ω
EXCEPT FOR G, IT MODEL
G, IT MODEL
(CHASSIS)
CN801
C8001
D801
Q801
IC801
1-634-484-
1-634-485-
1-634-474-
1-634-483-
1-634-475-
1-634-476-
1-634-473-
1-634-870-
J401 MIX MIC
J451 HEADPHONES
IC401
IC451
IC406
CN401A
CN401B
CN402
CN403
CN404
RV406 VOLUME
ENTER
CN504
CN902
④ TO MAIN BOARD CN704
(See page 36.)
③ TO MAIN BOARD CN703
(See page 35.)
⑥ TO MAIN BOARD
(See page 34.)
⑤ TO MAIN BOARD CN706
(See page 36.)
WHT
RED
P10
P6
P7
P8
A
B
C
35.)
13
11

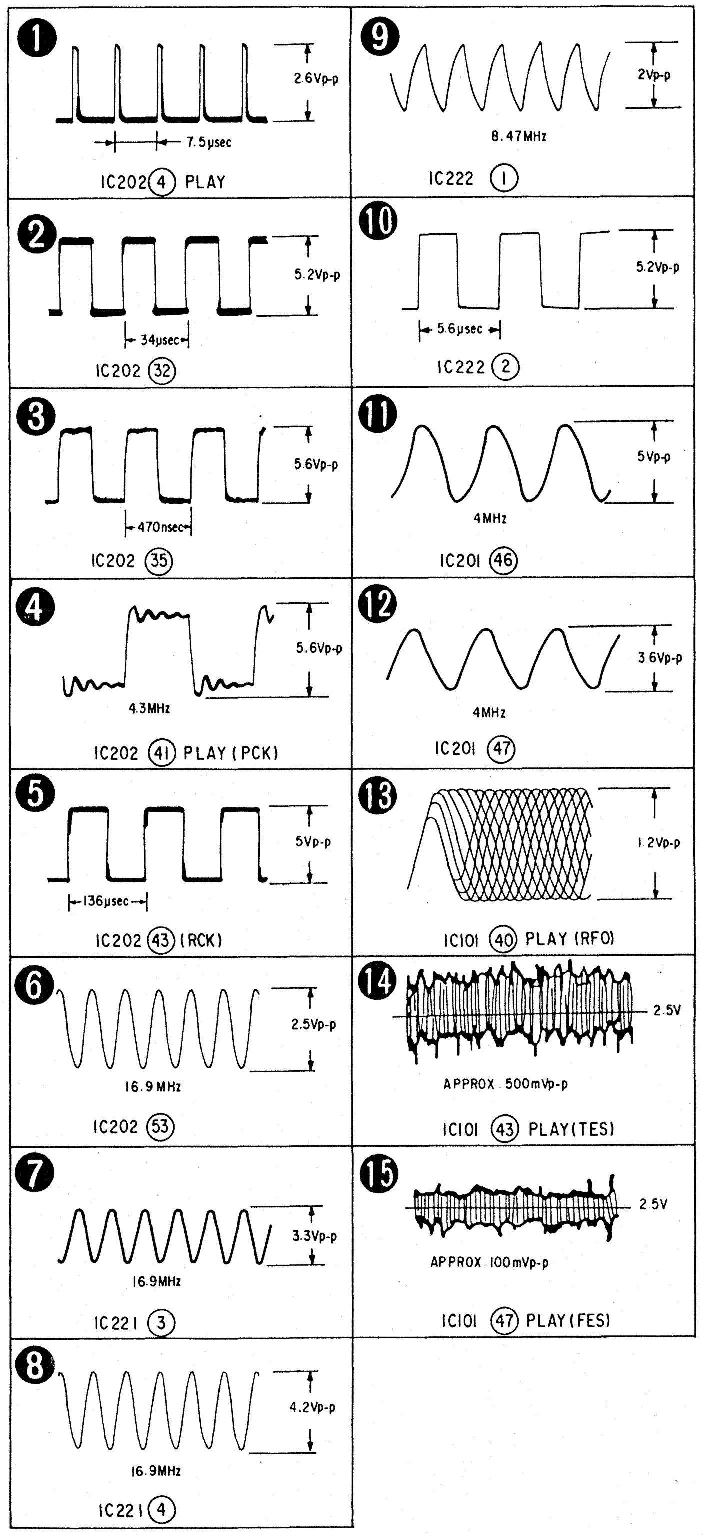
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D406	G-12	IC451	F-14
D521	G-2	IC501	G-6
D522	F-2	IC502	G-8
D523	E-2	IC503(*4)	E-8
D574	I-3	IC504(*4)	F-4
D576	I-6	IC505	H-5
D577	I-6	IC506	F-2
D578	I-7	IC551	F-5
D579	I-7	IC801	C-15
D580	I-3	IC901	C-8
D581	I-3		
D582	I-3	Q406	H-12
D583	H-3	Q407	H-13
D585(*1)	H-4	Q456	H-12
D588(*2)	H-4	Q457	H-13
D589(*3)	H-3	Q501	H-8
D590(*1)	H-3	Q551	H-7
D591(*4)	G-2	Q571	F-1
D592(*4)	G-2	Q572	G-3
D593(*4)	G-2	Q573	G-7
D594(*4)	G-2	Q574	I-4
D595(*4)	H-2	Q575	G-1
D598	I-6	Q576	I-4
D801	C-11	Q801	C-13
D901	A-9	Q901	A-9
D902	B-9	Q903	C-7
D903	C-5	Q904	C-7
D904	C-6	Q905	C-8
D907	C-7	Q906	C-9
D908	C-6	Q907	C-9
D909	A-9	Q908	C-9
D910	C-7		
D911	D-7		
D912	C-9		
IC401	E-14		
IC406	H-12		

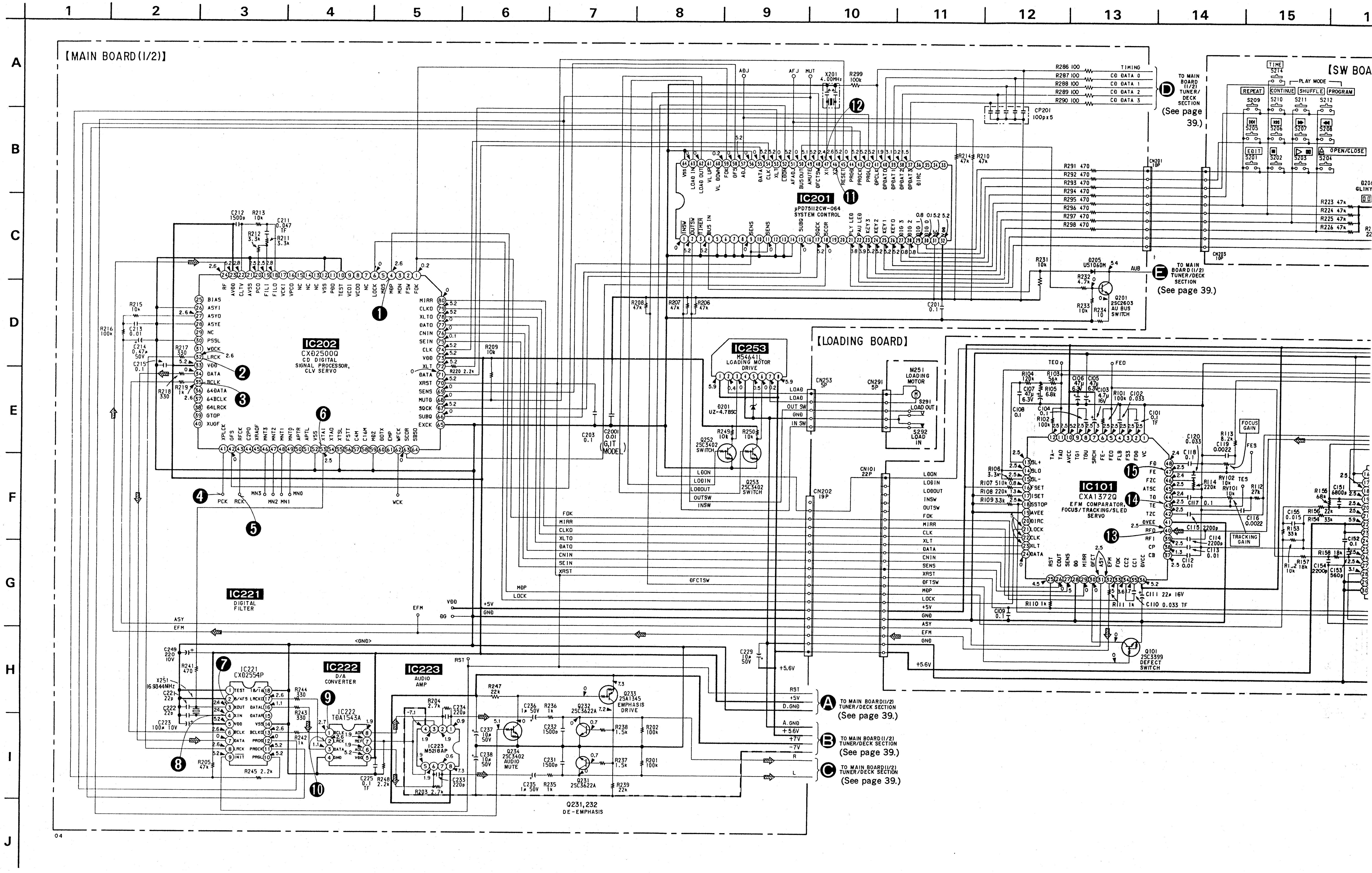
*1: Used on HCD-H70.
*2: Used on except for IT model.
*3: Used on IT model.
*4: Used on HCD-H70/H77/H1400.

Note:
- ○—— : parts extracted from the component side.
- CND: Canadian model
  G : Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model

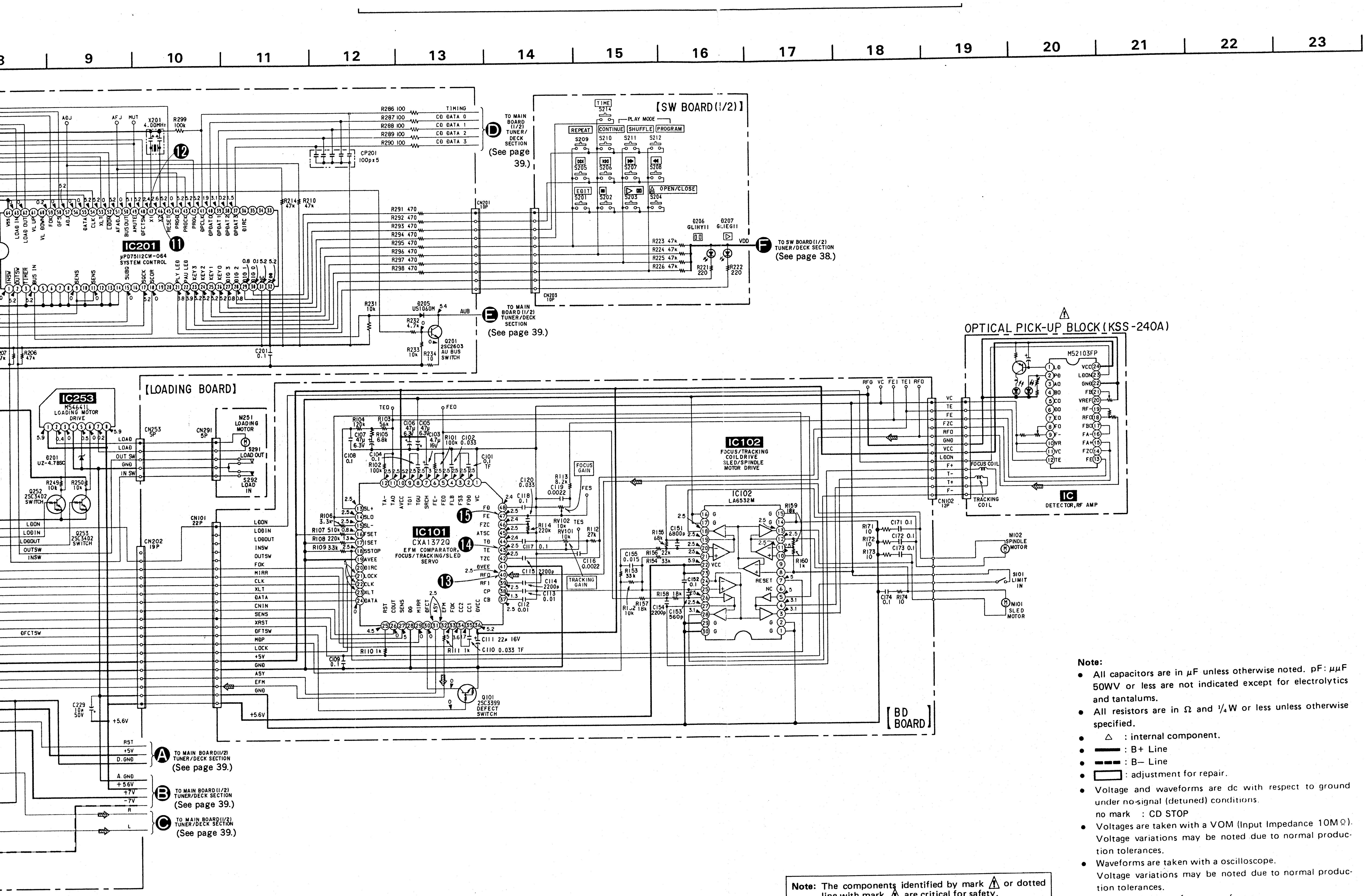
• Waveforms



6-7. SCHEMATIC DIAGRAM—CD Section— ● Refer to page 47 for Waveforms.



[MAIN BOARD (1/2)]
[SW BOA
[LOADING BOARD]
IC201
μPD75112CW-064
SYSTEM CONTROL
IC202
CXD2500Q
CD DIGITAL SIGNAL PROCESSOR, CLV SERVO
IC253
M54641L
LOADING MOTOR DRIVE
IC101
CXA1372Q
EFM COMPARATOR, FOCUS/TRACKING/SLED SERVO
IC221
DIGITAL FILTER
IC221
CXD2554P
IC222
D/A CONVERTER
IC222
TDA1543A
IC223
AUDIO AMP
IC223
M5218AP
Q231,232
DE-EMPHASIS
Q233
2SA1345
EMPHASIS DRIVE
Q234
2SC3402
AUDIO MUTE
Q201
2SC2603
AU BUS SWITCH
Q101
2SC3399
DEFECT SWITCH
Q252
2SC3402
SWITCH
Q253
2SC3402
SWITCH
M251
LOADING MOTOR
S291
LOAD OUT
S292
LOAD IN
X201
4.00MHz
X251
16.9344MHz
CP201
100p x 5
TO MAIN BOARD (1/2) TUNER/DECK SECTION
(See page 39.)
TO MAIN BOARD (1/2) TUNER/DECK SECTION
(See page 39.)
TO MAIN BOARD (1/2) TUNER/DECK SECTION
(See page 39.)
TO MAIN BOARD (1/2) TUNER/DECK SECTION
(See page 39.)
TO MAIN BOARD (1/2) TUNER/DECK SECTION
(See page 39.)
FOCUS GAIN
TRACKING GAIN
(G,IT MODEL)
REPEAT
CONTINUE
SHUFFLE
PROGRAM
PLAY MODE
TIME
EDIT
OPEN/CLOSE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J


9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
IC201
μPD75112CW-064
SYSTEM CONTROL
X201 4.00MHz
CP201 100p×5
TO MAIN BOARD (1/2) TUNER/DECK SECTION
(See page 39.)
[SW BOARD(1/2)]
TIME S214
PLAY MODE
REPEAT
CONTINUE
SHUFFLE
PROGRAM
OPEN/CLOSE
EDIT
D206 GL1HY11
D207 GL1EG11
TO SW BOARD(1/2) TUNER/DECK SECTION
(See page 38.)
Q205 US1060M
Q201 2SC2603 AU BUS SWITCH
AUB
OPTICAL PICK-UP BLOCK (KSS-240A)
M52103FP
FOCUS COIL
TRACKING COIL
IC DETECTOR, RF AMP
CN102 12P
[LOADING BOARD]
IC253
M54641L
LOADING MOTOR DRIVE
M251 LOADING MOTOR
S291 LOAD OUT
S292 LOAD IN
Q252 2SC3402 SWITCH
Q253 2SC3402 SWITCH
D201 UZ-4.7BSC
CN253 5P
CN291 5P
CN202 19P
CN101 22P
IC101
CXA1372Q
EFM COMPARATOR, FOCUS/TRACKING/SLED SERVO
FOCUS GAIN
TRACKING GAIN
IC102
FOCUS/TRACKING COIL DRIVE SLED/SPINDLE MOTOR DRIVE
IC102 LA6532M
M102 SPINDLE MOTOR
S101 LIMIT IN
M101 SLED MOTOR
Q101 2SC3399 DEFECT SWITCH
[BD BOARD]
TO MAIN BOARD(1/2) TUNER/DECK SECTION
(See page 39.)
TO MAIN BOARD(1/2) TUNER/DECK SECTION
(See page 39.)
TO MAIN BOARD(1/2) TUNER/DECK SECTION
(See page 39.)

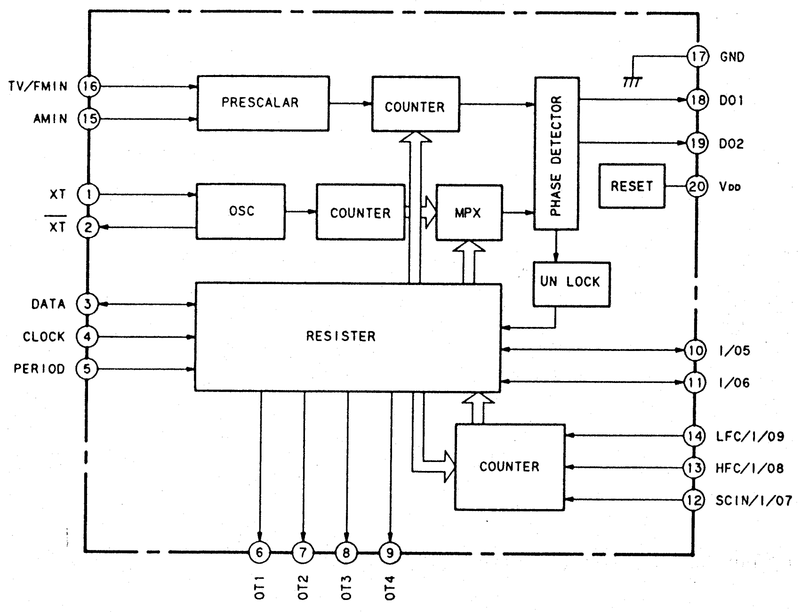
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note:

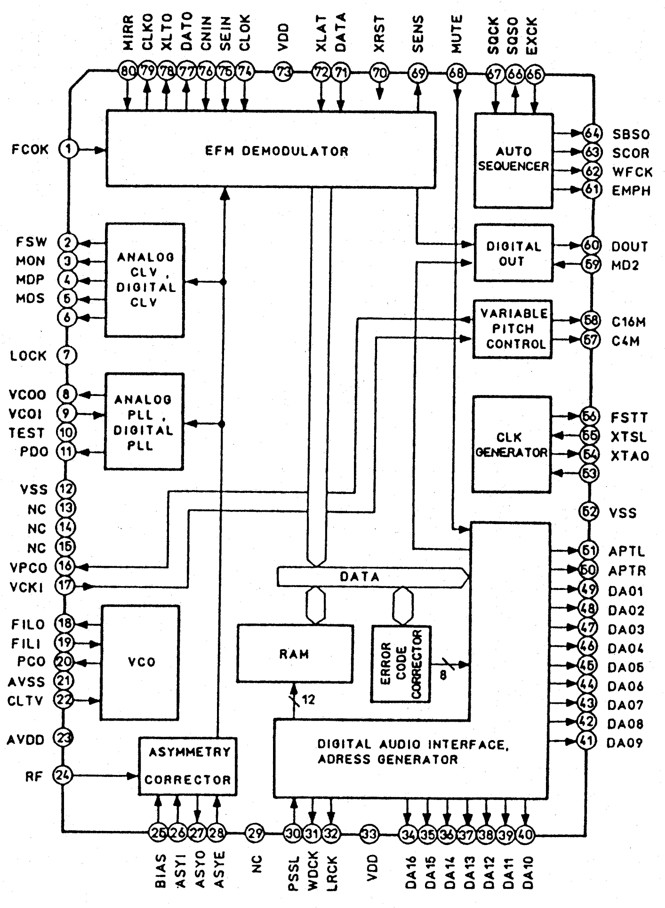
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▬ : B+ Line
- ╍ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : CD STOP
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

• IC Block Diagrams

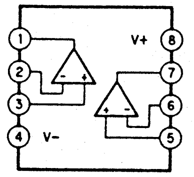
• IC51 TC9217P


TV/FMIN
AMIN
XT
DATA
CLOCK
PERIOD
PRESCALAR
COUNTER
OSC
MPX
PHASE DETECTOR
UN LOCK
RESET
RESISTER
GND
DO1
DO2
VDD
I/05
I/06
LFC/I/09
HFC/I/08
SCIN/I/07
OT1
OT2
OT3
OT4

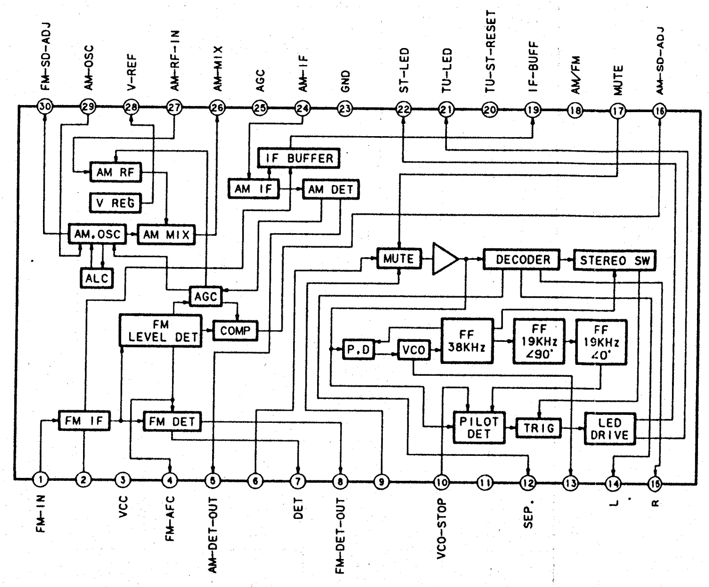
• IC202 CXD2500Q


MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
MUTE
SQCK
SQSO
EXCK
FCOK
EFM DEMODULATOR
AUTO SEQUENCER
SBSO
SCOR
WFCK
EMPH
FSW
MON
MDP
MDS
ANALOG CLV, DIGITAL CLV
DIGITAL OUT
DOUT
MD2
LOCK
VARIABLE PITCH CONTROL
C16M
C4M
VCOO
VCOI
TEST
PDO
ANALOG PLL, DIGITAL PLL
CLK GENERATOR
FSTT
XTSL
XTAO
VSS
NC
VPCO
VCKI
FILO
FILI
PCO
AVSS
CLTV
AVDD
RF
VCO
DATA
RAM
ERROR CODE CORRECTOR
ASYMMETRY CORRECTOR
DIGITAL AUDIO INTERFACE, ADRESS GENERATOR
APTL
APTR
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09
BIAS
ASYI
ASYO
ASYE
PSSL
WDCK
LRCK
DA16
DA15
DA14
DA13
DA12
DA11
DA10

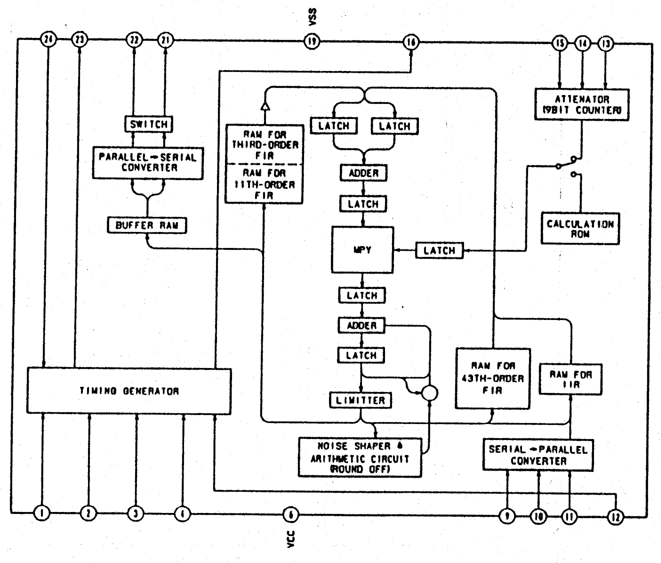
• IC223 M5218AP



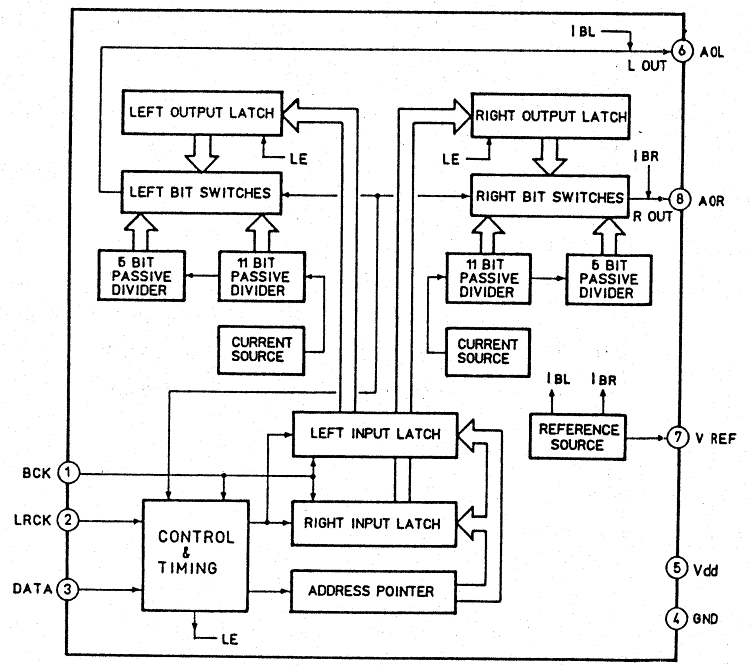
• IC81 LA1851N


FM-SD-ADJ
AM-OSC
V-REF
AM-RF-IN
AM-MIX
AGC
AM-IF
GND
ST-LED
TU-LED
TU-ST-RESET
IF-BUFF
AM/FM
MUTE
AM-SD-ADJ
AM RF
V REG
AM.OSC
AM MIX
ALC
IF BUFFER
AM IF
AM DET
AGC
MUTE
DECODER
STEREO SW
FM LEVEL DET
COMP
P.D
VCO
FF 38KHz
FF 19KHz ∠90°
FF 19KHz ∠0°
FM IF
FM DET
PILOT DET
TRIG
LED DRIVE
FM-IN
VCC
FM-AFC
AM-DET-OUT
DET
FM-DET-OUT
VCO-STOP
SEP.
L
R

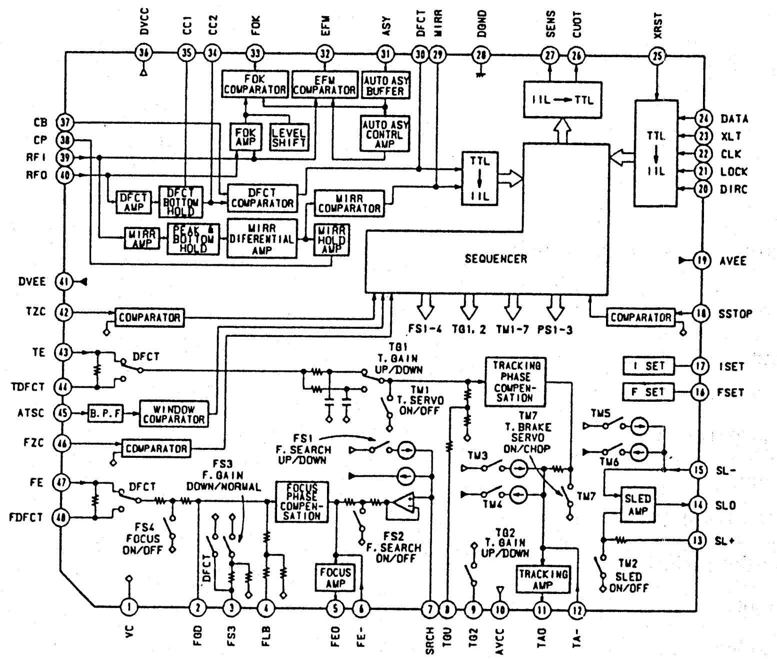
• IC221 CXD2554P


VSS
SWITCH
PARALLEL→SERIAL CONVERTER
BUFFER RAM
RAM FOR THIRD-ORDER FIR
RAM FOR 11TH-ORDER FIR
LATCH
ADDER
MPY
LIMITTER
NOISE SHAPER & ARITHMETIC CIRCUIT (ROUND OFF)
ATTENATOR (9BIT COUNTER)
CALCULATION ROM
RAM FOR 43TH-ORDER FIR
RAM FOR IIR
SERIAL→PARALLEL CONVERTER
TIMING GENERATOR
VCC

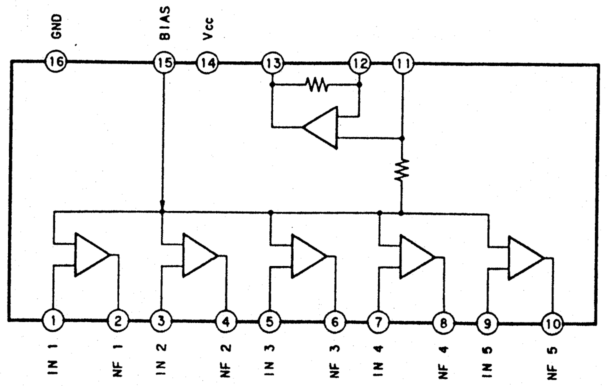
• IC222 TDA1543A


IBL
L OUT
AOL
LEFT OUTPUT LATCH
RIGHT OUTPUT LATCH
LE
IBR
LEFT BIT SWITCHES
RIGHT BIT SWITCHES
R OUT
AOR
5 BIT PASSIVE DIVIDER
11 BIT PASSIVE DIVIDER
CURRENT SOURCE
REFERENCE SOURCE
LEFT INPUT LATCH
RIGHT INPUT LATCH
V REF
BCK
LRCK
DATA
CONTROL & TIMING
ADDRESS POINTER
Vdd
GND

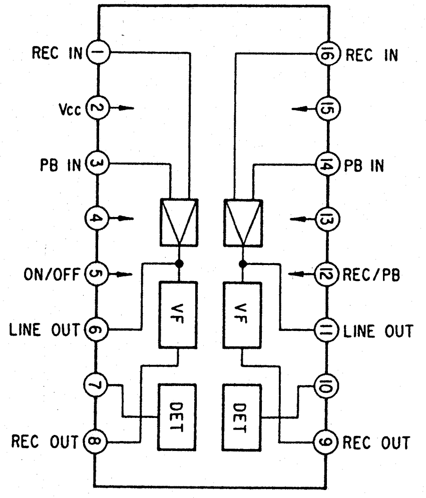
• IC101 CXA1372Q


DVCC
CC1
CC2
FOK
EFM
ASY
DFCT
MIRR
DGND
SENS
C.OUT
XRST
FOK COMPARATOR
EFM COMPARATOR
AUTO ASY BUFFER
FOK AMP
LEVEL SHIFT
AUTO ASY CONTRL AMP
IIL→TTL
TTL ↓ IIL
DATA
XLT
CLK
LOCK
DIRC
CB
CP
RFI
RFO
DFCT AMP
DFCT BOTTOM HOLD
DFCT COMPARATOR
MIRR COMPARATOR
MIRR AMP
PEAK & BOTTOM HOLD
MIRR DIFERENTIAL AMP
MIRR HOLD AMP
SEQUENCER
AVEE
DVEE
TZC
COMPARATOR
SSTOP
FS1-4 TG1,2 TM1-7 PS1-3
TE
TDFCT
ATSC
FZC
FE
FDFCT
DFCT
B.P.F
WINDOW COMPARATOR
TG1 T.GAIN UP/DOWN
TM1 T.SERVO ON/OFF
TRACKING PHASE COMPEN-SATION
I SET
F SET
ISET
FSET
TM7 T.BRAKE SERVO ON/CHOP
TM5
TM6
TM3
TM4
FS1 F.SEARCH UP/DOWN
FS3 F.GAIN DOWN/NORMAL
FOCUS PHASE COMPEN-SATION
FS2 F.SEARCH ON/OFF
FS4 FOCUS ON/OFF
FOCUS AMP
SLED AMP
TG2 T.GAIN UP/DOWN
TRACKING AMP
TM2 SLED ON/OFF
SL-
SLO
SL+
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGU
TG2
AVCC
TAO
TA-

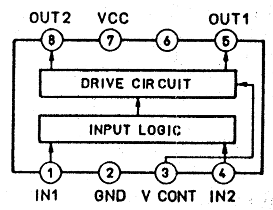
• IC501, IC551 M5226FP


GND
BIAS
Vcc
IN 1
NF 1
IN 2
NF 2
IN 3
NF 3
IN 4
NF 4
IN 5
NF 5

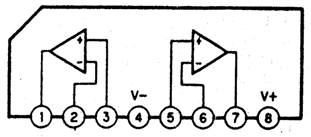
• IC701 CXA1101P


REC IN
Vcc
PB IN
ON/OFF
LINE OUT
REC OUT
REC/PB
VF
DET

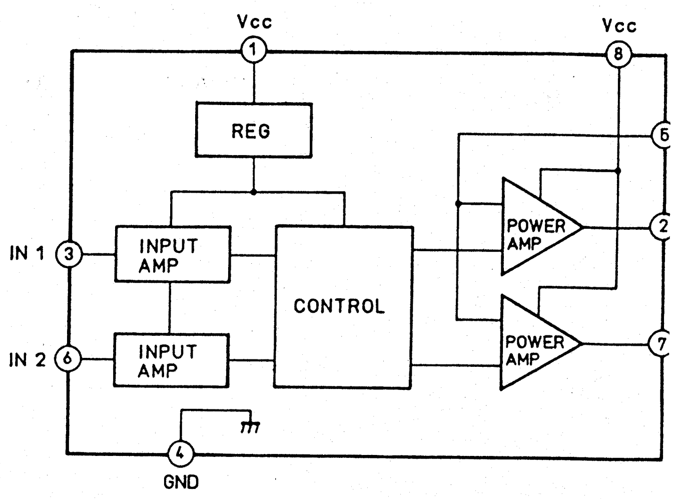
• IC406 LB1639


OUT2
VCC
OUT1
DRIVE CIRCUIT
INPUT LOGIC
IN1
GND
V CONT
IN2

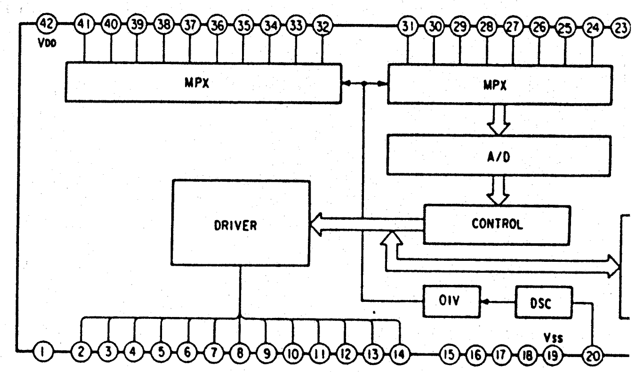
• IC401, 451, 502, 503, 603, 702, 704 M5218AL



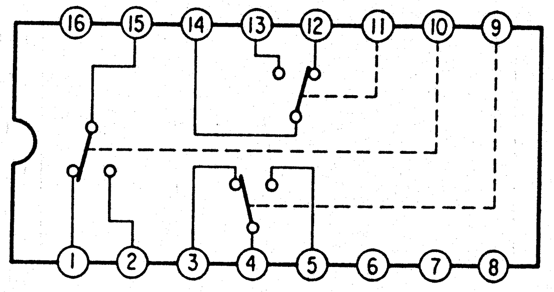
• IC253 M54641L


Vcc
REG
IN 1
IN 2
INPUT AMP
CONTROL
POWER AMP
GND

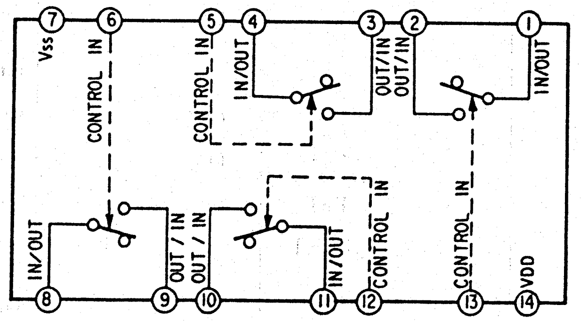
• IC504 LC7566

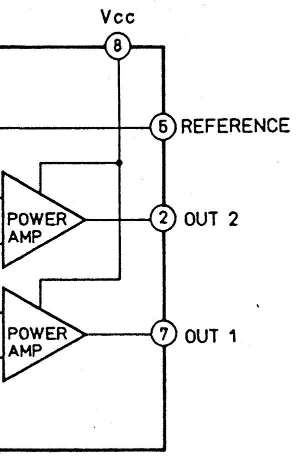

VDD
MPX
A/D
DRIVER
CONTROL
DIV
OSC
Vss

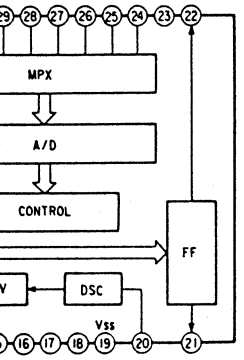
• IC601 μPD4053BC-A

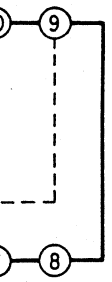


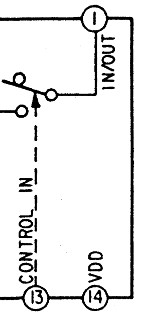
• IC703 μPD4066BC-A


Vss
CONTROL IN
CONTROL IN
IN/OUT
OUT/IN
IN/OUT
IN/OUT
OUT/IN
IN/OUT
CONTROL IN
CONTROL IN
VDD

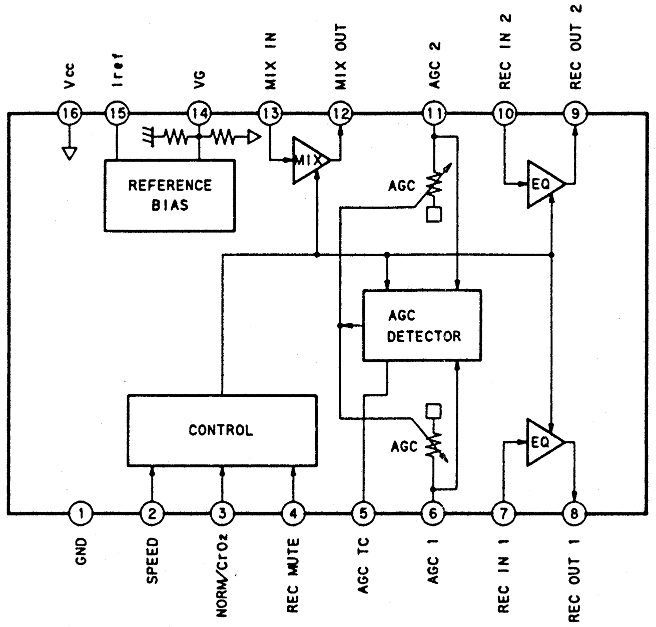

Vcc
8
5 REFERENCE
POWER AMP
2 OUT 2
POWER AMP
7 OUT 1


28
27
26
25
24
23
22
MPX
A/D
CONTROL
FF
OSC
Vss
16
17
18
19
20
21

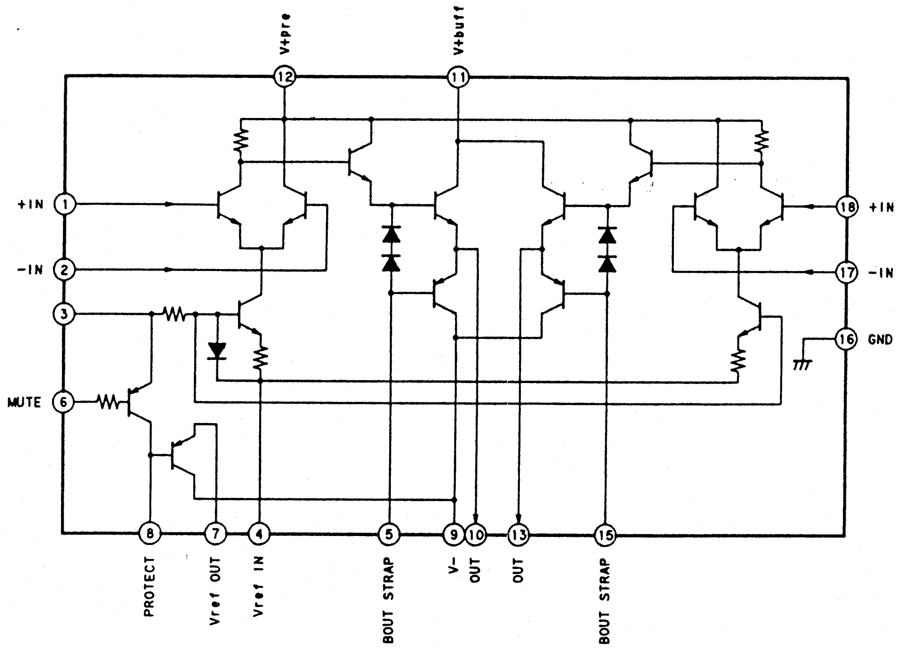



1
IN/OUT
CONTROL_IN
VDD
13
14

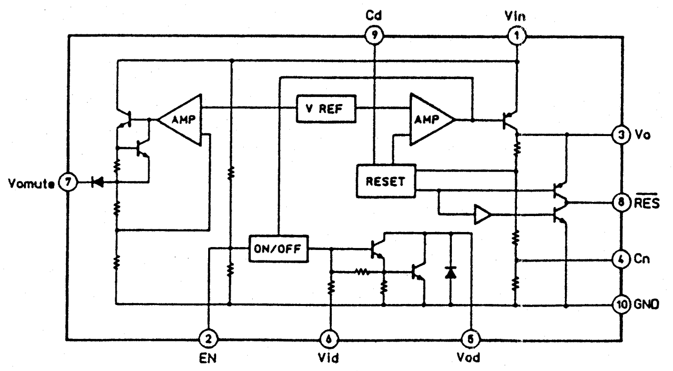
• IC602 CXA1298AP


Vcc
Iref
VG
MIX IN
MIX OUT
AGC 2
REC IN 2
REC OUT 2
16
15
14
13
12
11
10
9
REFERENCE BIAS
MIX
AGC
EQ
AGC DETECTOR
CONTROL
AGC
EQ
1
2
3
4
5
6
7
8
GND
SPEED
NORM/CrO2
REC MUTE
AGC TC
AGC 1
REC IN 1
REC OUT 1

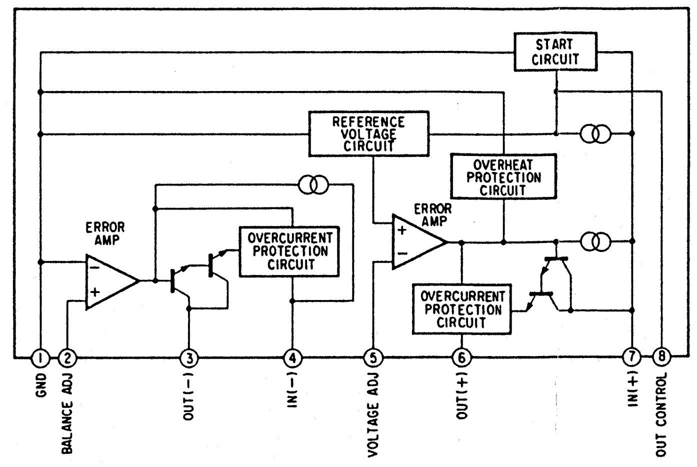
• IC801 STK-4132MK2


V+pre
V+buff
12
11
+IN
1
18
+IN
-IN
2
17
-IN
3
16
GND
MUTE
6
8
7
4
5
9
10
13
15
PROTECT
Vref OUT
Vref IN
BOUT STRAP
V-
OUT
OUT
BOUT STRAP

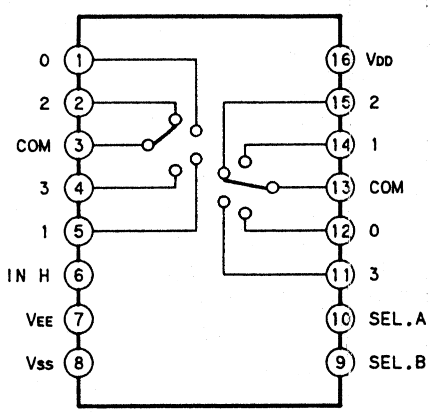
• IC999 LA5601


Cd
Vin
9
1
AMP
V REF
AMP
3 Vo
Vomute 7
RESET
8 RES
ON/OFF
4 Cn
10 GND
2
6
5
EN
Vid
Vod

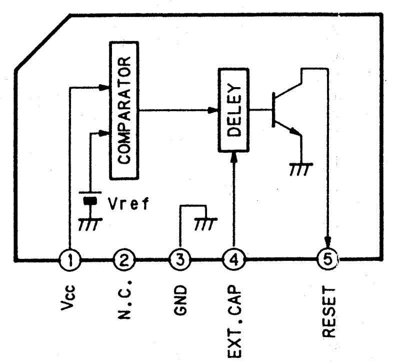
• IC901 M5230L-A


START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
1
2
3
4
5
6
7
8
GND
BALANCE ADJ
OUT(−)
IN(−)
VOLTAGE ADJ
OUT(+)
IN(+)
OUT CONTROL

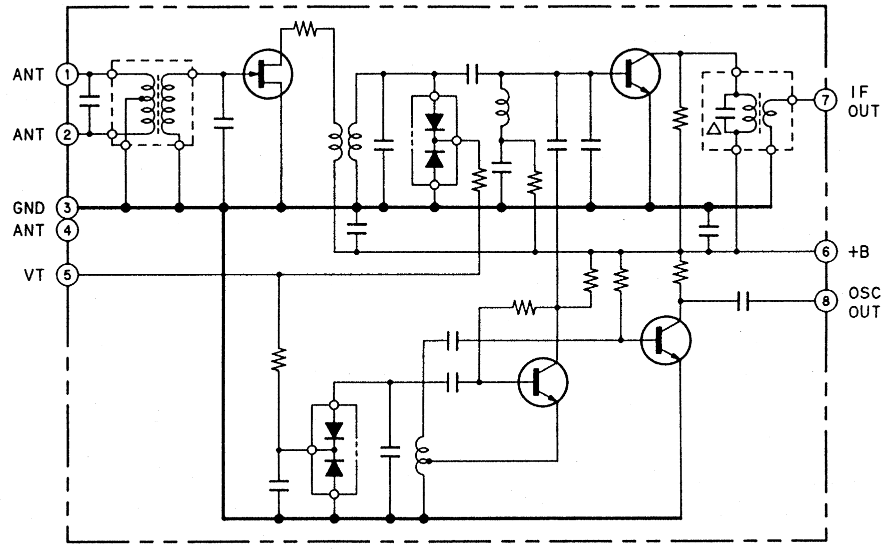
• IC705 M4052BPK


0 1
2 2
COM 3
3 4
1 5
IN H 6
VEE 7
Vss 8
16 VDD
15 2
14 1
13 COM
12 0
11 3
10 SEL.A
9 SEL.B

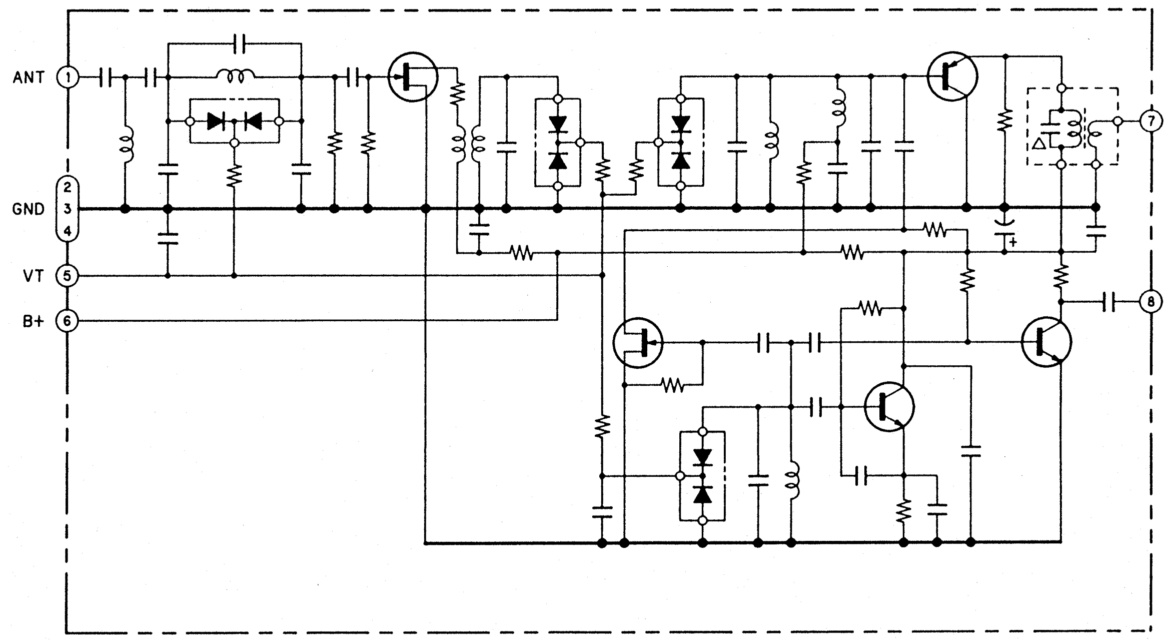
• IC706 M51953BL


COMPARATOR
DELEY
Vref
1
2
3
4
5
Vcc
N.C.
GND
EXT.CAP
RESET

• FE1 FM Front End (AEP, UK, E, EA, AUS)


ANT 1
ANT 2
GND 3
ANT 4
VT 5
7 IF OUT
6 +B
8 OSC OUT

• FE1 FM Front End (G, IT)


ANT 1
GND 2 3 4
VT 5
B+ 6
7 IF OUT
8 OSC OUT

6-8. PIN FUNCTIONS

• IC604 Deck Controller (M50964-212SP)

Pin No.	Pin Name	I/O	Symbol	Description
1	V_{cc}		V_{cc}	POWER 5±0.5V
2	AV_{ss}		AV_{ss}	Analog system GND
3	VREF	I	VREF	Analog system reference voltage input
4	D•A	O	D•A	D/A conversion output (Not used : open)
5	PWM	O	PWM	PWM output (Not used : GND)
6	P63	O	$\overline{\text{AMS}}$	AMS LED indication output
7	P62	O	$\overline{\text{A FWD}}$	Deck A FWD LED output
8	P61	O	$\overline{\text{BIAS IV}}$	TYPE IV bias oscillation output
9	P60	O	$\overline{\text{BIAS II}}$	TYPE II bias oscillation output
10	P47	O	$\overline{\text{A REV}}$	Deck A RVS LED output
11	P46	O	$\overline{\text{A REV}}$	Deck A RVS LED output
12	AN5	I	B HALF	Beck B record prevention claw A, B detection input (Analogue)

Voltage (V)	1V	1.9V	2.8V	3.9V	5V
Half	ON	ON	ON	ON	OFF
Claw A	OFF	ON	OFF	ON	OFF
Claw B	ON	ON	OFF	OFF	OFF

Pin No.	Pin Name	I/O	Symbol	Description
13	AN4	I	KEY3	KEY input
14	AN3	I	KEY2	
15	AN2	I	KEY1	

Voltage (V)	0	0.3	0.7	1.2	1.7	2.3	2.8	3.4	4.0	4.5	5.0
KEY 1	B ■	B ❚❚	B ▶	B ◀	B ○	A ◀◀	A ▶▶		ᗡD B	ᗡD C	OFF
KEY 2	A ■	A ❚❚	A ▶	A ◀		B ◀◀	B ▶▶	B ●	↻	RELAY	OFF
KEY 3	AMS		H DUB	N DUB	CD SYNC						

Pin No.	Pin Name	I/O	Symbol	Description
16	P41	O	$\overline{\text{B FWD}}$	Deck B FWD LED output
17	P40	O	$\overline{\text{B REV}}$	Deck B RVS LED output
18	P37	O	$\overline{\text{A FWD}}$	Deck A FWD LED output
19	P36	O	$\overline{\text{B PAUSE}}$	Deck B PAUSE LED output
20	P35	O	$\overline{\text{B REC}}$	Deck B REC LED output
21	P34	O	DOLBY $\overline{\text{B}}$/C	Dolby $\overline{\text{B}}$/C output
22	P33	O	DOLBY $\overline{\text{ON}}$/OFF	Dolby $\overline{\text{ON}}$/OFF output
23	P32	I	SIRCS	SIRCS input or AUDIO BUS reverse input
24	P31	O	$\overline{\text{70}}$/120	Playback EQ output for playing deck
25	P30	O	AUB OUT	AUDIO BUS output
26	INT1	I	AUB IN	AUDIO BUS normal input
27	CNVSS		CNVSS	GND
28	$\overline{\text{RESET}}$	I	$\overline{\text{RESET}}$	Microcomputer reset input
29	XIN	I	XIN	Clock input (4MHz)
30	X_o	O	X_o	Clock output (4MHz)
31	Φ	O	Φ	Not used (open)

Pin No.	Pin Name	I/O	Symbol	Description
32	V_{ss}		V_{ss}	GND
33	P57	I	$\overline{\text{TEST}}$	Electrical adjustment test mode setting
34	P56	I	TYPE IV	TYPE IV switch input
35	P55	I	B70/$\overline{\text{120}}$	Deck B TYPE II switch input
36	P54	I	B SHUT	Deck B Reel table signal input
37	P53	I	A70/$\overline{\text{120}}$	Deck A TYPE II switch input
38	P52	I	A SHUT	Deck B Reel table signal input
39	P51	I	$\overline{\text{A HALF}}$	Deck A Half switch input
40	P50	I	AMS IN	AMS signal input
41	P17	O	$\overline{\text{M MUTE}}$	Meter mute output
42	P16	O	$\overline{\text{L MUTE}}$	Line mute output
43	P15	O	$\overline{\text{PASS}}$	PASS AMP change output
44	P14	O	$\overline{\text{REC}}$/PB	Dolby IC REC/PB select output
45	P13	O	$\overline{\text{AMS}}$/BS	AMS AMP characteristics change ouptut
46	P12	O	AMS A/$\overline{\text{B}}$	AMS AMP input Deck A/B select output
47	P11	O	SEL A/$\overline{\text{B}}$	Dolby IC PB input Deck A/B select output
48	P10	O	$\overline{\text{BIAS I}}$	TYPE I bias oscillation output
49	P07	O	$\overline{\text{RELAY}}$	REC/PB change relay output
50	P06	O	$\overline{\text{PMB}}$	Deck B plunger hold output
51	P05	O	$\overline{\text{KICK B}}$	Deck B plunger kick output
52	P04	O	$\overline{\text{PMA}}$	A Deck A plunger hold output
53	P03	O	$\overline{\text{KICK A}}$	Deck A plunger kick output
54	P02	O	B H/$\overline{\text{L}}$	Deck B capstan motor speed select
55	P01	O	A H/$\overline{\text{L}}$	Deck A capstan motor speed select
56	P00	O	M $\overline{\text{ON}}$/OFF	Capstan motor $\overline{\text{ON}}$/OFF
57	P27	O	REC MUTE	REC MUTE output
58	P26	O	B SCHMITT	Deck B reel table schmitt output
59	P25	O	A SCHMITT	Deck A reel table schmitt output
60	P24	O	$\overline{\text{H DUB}}$	High Speed Dubbing LED output
61	P23	O	$\overline{\text{N DUB}}$	Normal Speed Dubbing LED output
62	P22	O	$\overline{\text{CD DUB}}$	Auto CD Synchro LED output
63	P21	I	$\overline{\text{AMS AVIRABLE}}$	Deck A PAUSE LED output
64	P20	O	$\overline{\text{SIRCS}}$/AUB	SIRCS/AUDIO BUS mode select

[TEST MODE]

When making pin ㉝ low (connect TP1 to ground with jumper wire), following function operates.

1. Sourec monitor
   Release the line mute while recording.

2. High speed playback
On recording, while pressing HIGH SPEED (DUBBING) button, high speed playback operates.
3. Record memory stop
Using DIRECTION MODE switch ⇄, returns to the recording start point and stops or plays.

- **IC505 Display Control (μPD75212ACW-273)**

Pin No.	Pin Name	I/O	ACTIVE	Description	Hold
1	S3	O	H	Segment, keyscan output terminals	Low
2	S2				
3	S1				
4	S0				
5	INT4	I	L	HOLD input	input
6	SCK	O	—	CLOCK (TC9217P T-BUS)	
7	SO	I/O	—	DATA (TC9217P T-BUS)	
8	PO3	I	L	SIGNAL input	
9	INT0	I	L	AUDIO-BUS input	input
10	INT1	I	Down	CD display data, timng	
11	P12	I	L	Remote input	
12	P13	I	L	STEREO input	
13	P20	I	—	CD display data	input
14	P21				
15	P22				
16	P23				
17	P30	I	L	DUAL 2 input	input
18	P31	I	L	DUAL 1 input	
19	P32	O	L	POWER port	
20	P33	O	L	MUTING	Low
21	P60	I	H	Keyscan input	input
22	P61				
23	P62				
24	P63				
25	P40	O	—	FUNCTION A output	Low
26	P41	O	—	FUNCTION B output	
27	P42	O	H	AUDIO-BUS output	
28	P43	O	L	PERIOD (TC9217P T-BUS)	
29	PP0	—	—	Not used (open)	—
30	X1	—	—	Main system clock 4.19MHz	—
31	X2				
32	V_{SS}	—	—	GND terminal (0V)	—
33	XT1	—	—	Sub system clock 32.768kHz	—
34	XT2				
35	P50	O	L	DBFB	Low
36	P51	O	L	SURROUND	
37	P52	O	L	Volume DOWN	
38	P53	O	L	Volume UP	
39	RESET	I	L	System reset input terminal	—
40	T0	O	H	Digit output	Low
41	T1				
42	T2	O	H	Digit output	Low
43	T3				
44	T4				
45	T5				
46	T6				
47	T7				
48	T8				
49	T9	O	—	Not used (open)	Low
50	S15	O	H	Segment output	Low
51	S14				
52	S13				
53	S12				
54	S11	O	H	Segment output, specification distinction diode output	Low
55	S10				
56	V_{LOAD}	—	—	Pull-down resistor connect terminal of FIP driver	—
57	V_{PRE}	—	—	Power supply terminal of FIP driver output buffer	—
58	S9	O	H	Segment output	Low
59	S8				
60	S7				
61	S6				
62	S5	O	H	Segment, keyscan output teminal	Low
63	S4				
64	V_{DD}	—	—	Power supply terminal (5V)	—

[KEY, DIODE MATRIX]

	Key						Diode	
	S5	S4	S3	S2	S1	S0	S10	S11
P60	CLOCK	TIMER CONTROL	VIDEO	DUAL	STATION UP	STATION DOWN	TIMER FUNCTION	A
P61	DISPLAY	SLEEP	TUNER	AUTO/ MANUAL	SHIFT	ENTER	VIDEO/ PHONO	B
P62	POWER	TIMER SET	CD	SURROUND	BAND	MERORY	IF+50kHz	C
P63	——	——	TAPE	DBFB	TUNING UP	TUNING DOWN	IF−50kHz	——

1) Pressing the key twice is not allowed. (First pressing is preceded)
2) The remote control precedes the input with the pey.
3) Input the diode in resetting and in releasing HOLD.

• IC201 CD Controller (μPD75112CW-064)

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{INSW}}$	I	Disk tray clamp-end input
2	$\overline{\text{OUTSW}}$	I	Disk tray open-end input
3	(TIMER)	I	Timer start input
4	BSIN	I	Audio bus input
5	Not Used	I	GND
6	Not Used	I	GND
7	Not Used	I	GND
8	Not Used	I	GND
9	SENS	I	SENS input, and the state input of every kind from CXD2500Q and CXA1372Q
10	Not Used	I	GND
11	SENS	I	SENS input, and the state input of every kind from CXD2500Q and CXA1372Q
12	Not Used	I	GND
13	Not Used	I	GND
14	Not Used	I	GND
15	SUBQ	I	Q data serial input from CXD2500Q
16	Not Used	O	OPEN
17	SQCLK	O	Sub-code Q data read-in clock output for CXD2500Q
18	SCOR	I	Sub-code synchro S0 and S1 detect input
19	Not Used	O	OPEN
20	Not Used	O	OPEN
21	PLAYL	O	Play LED ON/OFF output
22	PAUSL	O	Pause LED ON/OFF output
23	KEY3	I	Key data input
24	KEY2	I	Key data input
25	KEY1	I	Key data input
26	KEY0	I	Key data input
27	DG3	O	Key-scan digit output
28	DG2	O	Key-scan digit output
29	DG1	O	Key-scan digit output
30	DG0	O	Key-scan digit output
31	Not Used	I	+5V
32	VDD	I	+5V
33	Not Used	O	OPEN
34	Not Used	O	OPEN
35	Not Used	O	OPEN
36	Not Used	O	On time 1 track jump, tracking drive is inversed output for CXA1372Q
37	DPDAT3	O	Display data output for tuner amp micon
38	DPDAT2	O	Display data output for tuner amp micon
39	DPDAT1	O	Display data output for tuner amp micon
40	DPDAT0	O	Display data output for tuner amp micon
41	DPCLK	O	Display data transmission clock output for tuner amp micon
42	PRGL	O	Serial data latch pulse output for digital filter CXD2551P
43	PRGCK	O	Serial clock output for digital filter CXD2551P
44	PRGD	O	Serial clock output for digital filter CXD2551P

Pin No.	Pin Name	I/O	Description
45	$\overline{\text{RESET}}$	I	System reset input terminal (LOW ACTIVE)
46	X2	I	System clock input 4.19MHz
47	X1	I	System clock input 4.19MHz
48	DFCTSW	O	From focus in till spindle kick is ON except then is OFF.
49	AMUTE	O	Muting ON/OFF output
50	BSOUT	O	Audio bus output
51	AFADJ	I	Test mode input, and on time POWER "L" is test move ment of every kind
52	LDON	O	Laser diode ON/OFF output
53	XLT	O	Serial data latch pulse output for CXD2500Q
54	CLK	O	Serial data output for CXD2500Q
55	DATA	O	Serial data output for CXD2500Q
56	Not Used	I	GND
57	ADJ	I	Test mode input, "L" is GFS no check.
58	GFS	I	GFS OK/NO Good input
59	FOK	I	Focus OK NO Good input
60	Not Used	O	OPEN
61	Not Used	O	OPEN
62	LODOUT	O	Disc tray loading-out output
63	LODIN	O	Disc tray loading-in output
64	VSS	I	GND

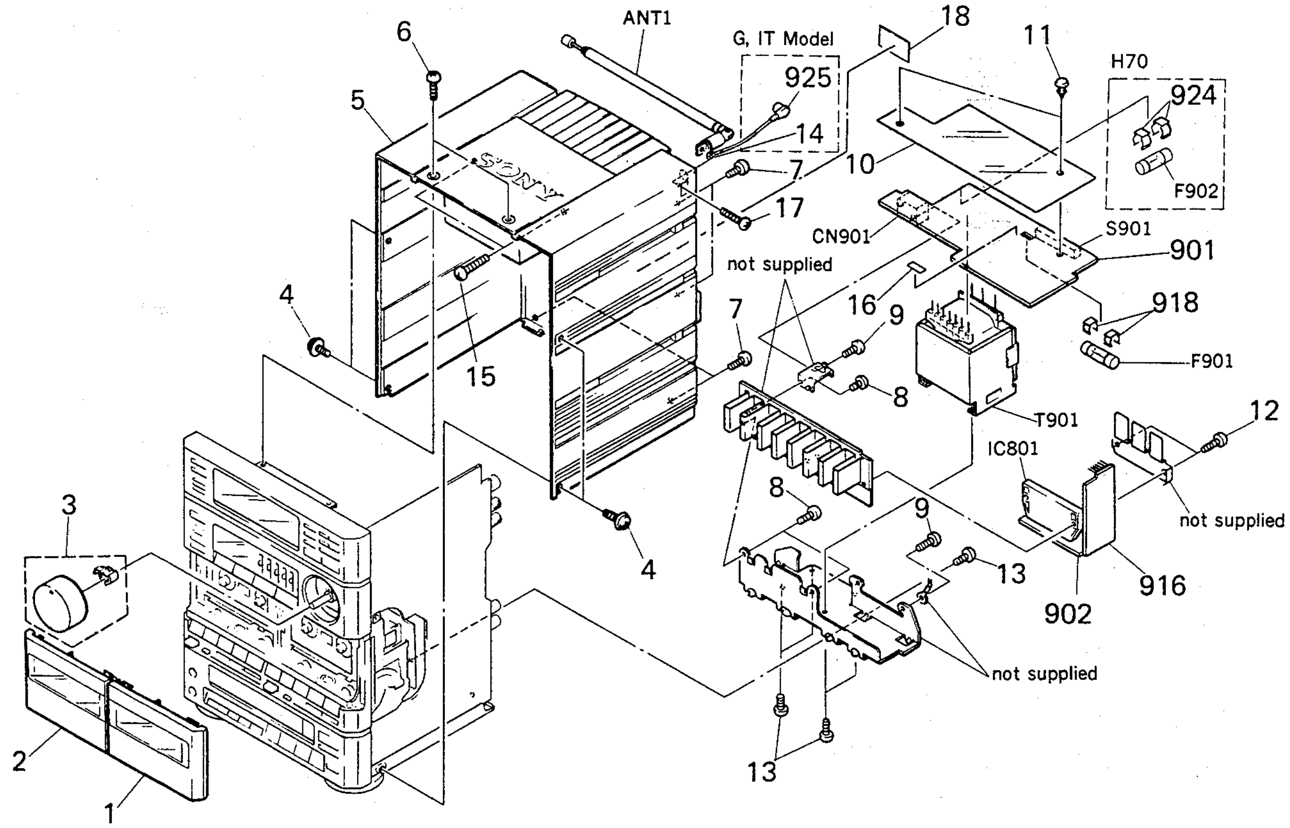
SECTION 7
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts Color ↑ Cabinet's Color
- G : Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model
- Hardware(# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

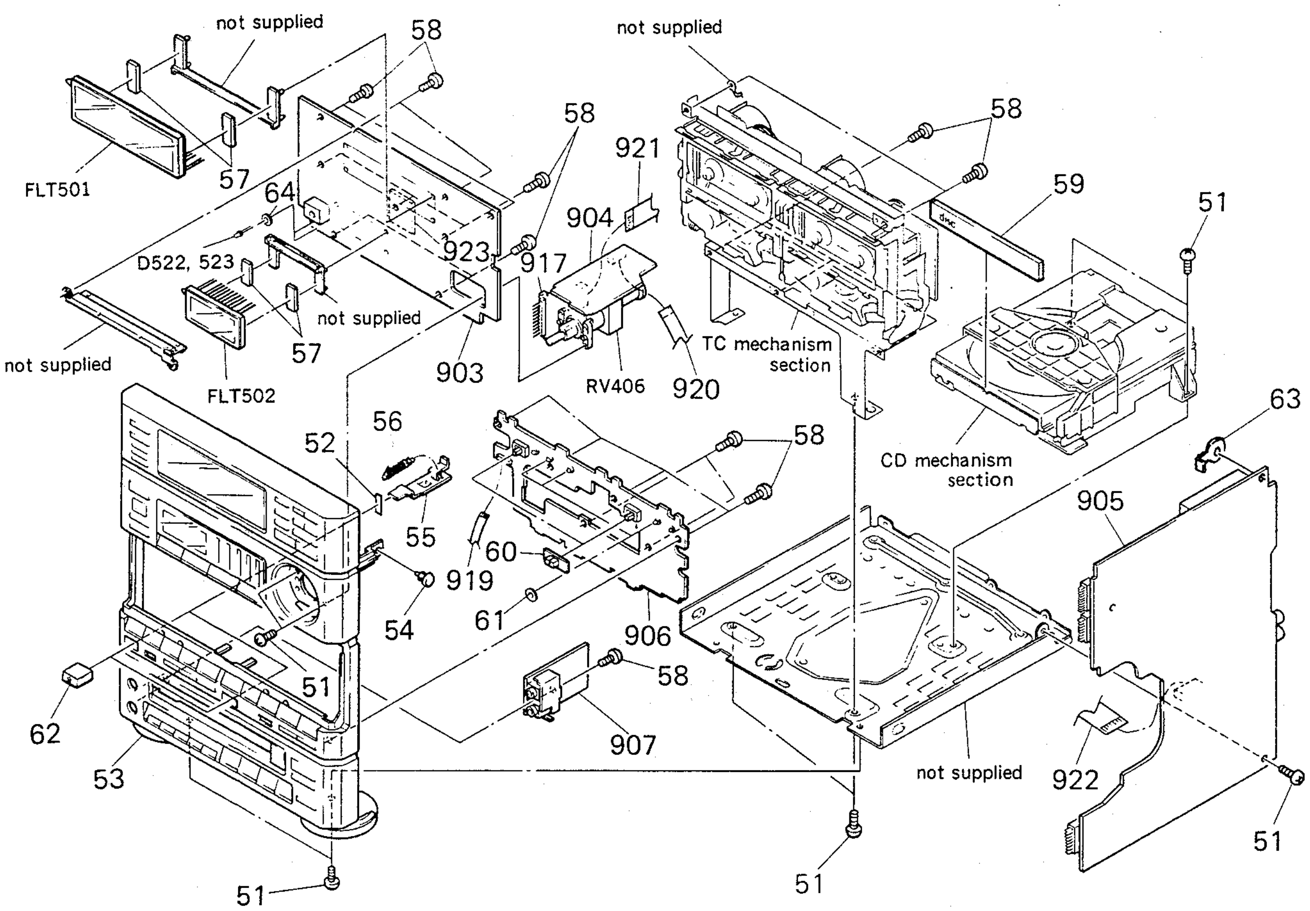
7-1. CASE, POWER SECTION



Ref. No.	Part No.	Description	Remark
1	X-4941-495-1	LID (B) ASSY, CASSETTE	
2	X-4941-496-1	LID (A) ASSY, CASSETTE	
3	X-4936-803-1	KNOB (VOLUME) ASSY	
4	3-704-366-01	SCREW (CASE) (M3X8)	
5	X-4936-802-1	CASE ASSY (H66, H77)	
5	X-4936-804-1	CASE ASSY (H70)	
5	4-936-804-11	CASE ASSY (H1200, H1400)	
6	7-682-549-09	SCREW +BVTT 3X10 (S)	
7	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
8	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
9	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
10	* 4-936-816-01	COVER (INSULATING)	
11	4-812-134-31	RIVET NYLON, 3.5	
12	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
13	7-682-547-04	SCREW +BVTT 3X6 (S)	
14	7-623-508-01	EARTH, LUG 3 (G, IT)	
15	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S (H66, H70, H77)	
16	3-701-947-10	LABEL (T800MA), FUSE (H66, H1200)	
17	7-682-549-09	SCREW +BVTT 3X10 (S) (H66, H70, H77)	
18	* 4-941-548-01	LABEL, CLASS 1	

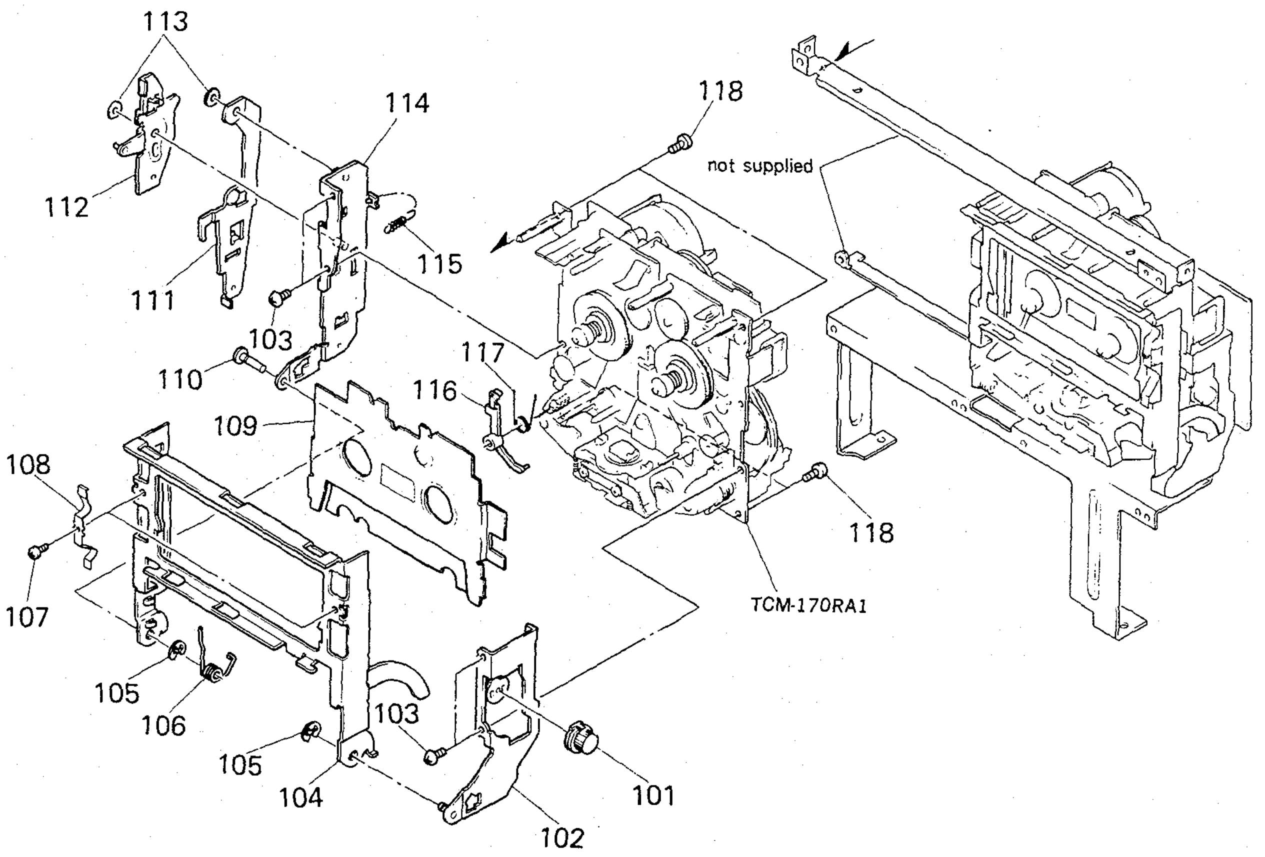
Ref. No.	Part No.	Description	Remark
901	* 1-634-474-11	TRANSFORMER BOARD	
902	* 1-634-485-11	POWER BOARD	
916	* 1-634-484-11	CAPACITOR BOARD	
918	* 1-533-213-31	HOLDER, FUSE	
924	* 1-533-213-31	HOLDER, FUSE (H70)	
925	* 1-562-908-11	CONNECTOR, FEMALE (NO SHIELD) (G, IT)	
ANT1	1-501-270-00	ANTENNA, TELESCOPIC (H66, H70, H77)	
CN901 ⚠·	1-526-930-11	INLET, AC (~AC IN) (E)	
CN901 ⚠·	1-526-931-11	INLET, AC (~AC IN) (EXCEPT E)	
F901 ⚠·	1-532-078-00	FUSE (1A) (EA, H77, H1400)	
F901 ⚠·	1-532-215-00	FUSE, TIME-LAG (0.8A) (E, AUS, H66, H1200)	
F902 ⚠·	1-532-259-11	FUSE, GLASS TUBE (1.6A) (H70)	
IC801	8-749-920-13	IC STK-4132MK2	
S901 ⚠·	1-571-722-11	SWITCH, VOLTAGE SELECTION (VOLTAGE SELECTOR) (H70)	
T901 ⚠·	1-450-462-11	TRANSFORMER, POWER (H77, H1400)	
T901 ⚠·	1-450-463-11	TRANSFORMER, POWER (H66, H1200)	
T901 ⚠·	1-450-464-11	TRANSFORMER, POWER (H70)	

7-2. FRONT PANEL, MAIN BOARD SECTION


not supplied
58
not supplied
FLT501
57
64
58
921
58
D522, 523
923
904
917
59
51
not supplied
not supplied
57
FLT502
903
RV406
920
TC mechanism section
63
52
56
58
CD mechanism section
905
55
60
919
54
61
906
51
58
62
907
53
not supplied
922
51
51
51

Ref. No.	Part No.	Description	Remark
51	7-682-547-04	SCREW +BVTT 3X6 (S)	
52	3-831-441-11	CUSHION, CABINET (UPPER)	
53	X-4941-498-1	PANEL ASSY, FRONT (H77)	
53	X-4941-499-1	PANEL ASSY, FRONT (H66)	
53	X-4941-500-1	PANEL ASSY, FRONT (H1200)	
53	X-4941-505-1	PANEL ASSY, FRONT (H1400)	
53	X-4941-508-1	PANEL ASSY, FRONT (H70)	
54	4-812-134-31	RIVET NYLON, 3.5	
55	* 4-936-807-01	SLIDER (EJECT) (B) (DECK B)	
55	* 4-936-808-01	SLIDER (EJECT) (A) (DECK A)	
56	3-489-099-11	SPRING, TENSION	
57	* 4-932-810-11	CUSHION (FL)	
58	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
59	4-936-833-11	PANEL, LOADING	
60	3-349-054-01	KNOB (SLIDE)	
61	3-831-441-XX	CUSHION, BLIND	
62	3-349-055-01	BUTTON (EJECT)	
63	* 4-925-530-01	PLATE, GROUND	
64	3-350-679-11	WASHER, FIBER	
903	* A-4341-540-A	DISPLAY BOARD, COMPLETE(H66:AEP,H1200)	
903	* A-4341-541-A	DISPLAY BOARD, COMPLETE(H66:G)	
903	* A-4341-543-A	DISPLAY BOARD, COMPLETE(H66:IT)	
903	* A-4341-545-A	DISPLAY BOARD, COMPLETE(H70)	
903	* A-4341-546-A	DISPLAY BOARD, COMPLETE(H77:AEP,H1400)	
903	* A-4341-548-A	DISPLAY BOARD, COMPLETE(H77:IT)	
903	* A-4341-549-A	DISPLAY BOARD, COMPLETE(H77:G)	
904	* 1-634-476-11	VR BOARD	
905	* A-4345-098-A	MAIN BOARD, COMPLETE (AEP, UK)	
905	* A-4345-099-A	MAIN BOARD, COMPLETE (G, IT)	
905	* A-4345-100-A	MAIN BOARD, COMPLETE (H70)	
906	* 1-634-477-11	SW BOARD	
907	* 1-634-483-11	JACK BOARD	
917	* 1-634-475-11	JUMPER BOARD	
919	1-575-675-11	WIRE, FLAT TYPE (14 CORE)	
920	1-575-674-11	WIRE, FLAT TYPE (8 CORE)	
921	1-575-672-11	WIRE, FLAT TYPE (13 CORE)	
922	1-575-673-11	WIRE, FLAT TYPE (15 CORE)	
923	* 1-634-870-11	SHIELD BOARD	
D522	8-719-313-39	DIODE SEL1910DM-LC05-CD	
D523	8-719-313-39	DIODE SEL1910DM-LC05-CD	
FLT501	1-519-577-11	INDICATOR TUBE, FLUORESCENT	
FLT502	1-519-578-11	INDICATOR TUBE, FLUORESCENT (H70, H77, H1400)	
RV406	1-238-865-11	RES, VAR, CARBON (MOTOR) 100KX2 (VOLUME) (INCLUDING VOL LED)	

7-3. MD CHASSIS SECTION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not supplied
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TCM-170RA1
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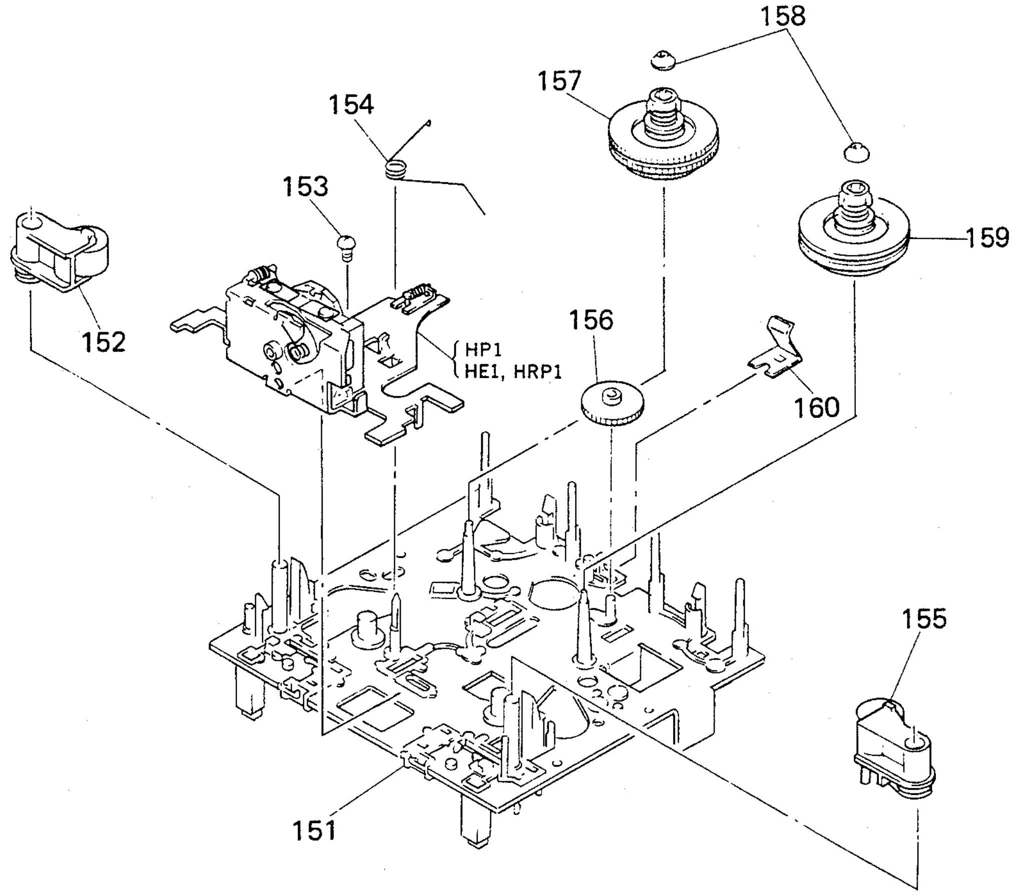
Ref. No.	Part No.	Description	Remark
101	X-3340-185-1	GEAR (DAMPER) ASSY	
102	* X-3332-494-1	BRACKET (R) ASSY	
103	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
104	* 3-340-150-01	HOLDER, CASSETTE	
105	7-624-105-04	RETAINING, RING E-2.3	
106	3-346-364-01	SPRING (LOADING), TORSION	
107	7-621-255-15	SCREW +PTT 2X3 (S)	
108	3-354-908-01	SPRING (CASSETTE RETAINER)	
109	* 3-340-123-01	RETAINER, CASSETTE	
110	* 3-346-334-01	SHAFT (HOLDER FITTING LEFT)	
111	* 3-340-142-01	LEVER (EJECT)	
112	* X-3332-465-1	LEVER (LOCK) ASSY	
113	3-558-708-21	WASHER, STOPPER	
114	* X-3332-466-1	BRACKET (LEFT) ASSY	
115	3-343-474-01	SPRING, TENSION	
116	3-343-476-01	LEVER (EJECT SAFETY LEVER)	
117	3-343-477-01	SPRING, TORSION (EJECT SAFETY)	
118	7-621-770-67	SCREW +PTT 2.6X6 (S)	

7-4. MECHANISM DECK SECTION (1)

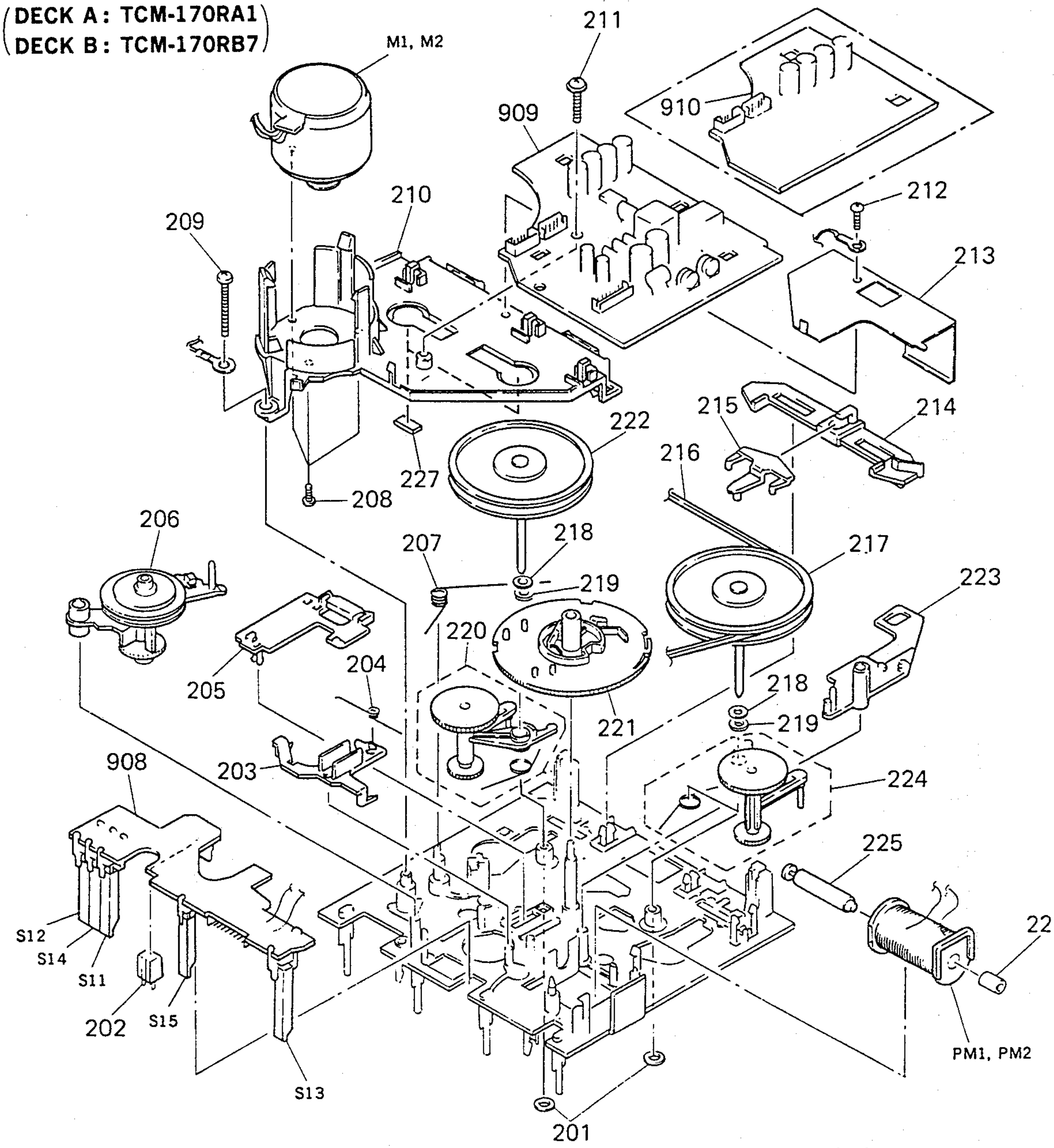
(DECK A : TCM-170RA1)
(DECK B : TCM-170RB7)



Ref. No.	Part No.	Description	Remark
151	X-3343-439-1	CHASSIS ASSY, MECHANICAL	
152	X-3343-456-1	LEVER (PINCH R) ASSY	
153	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
154	3-343-401-01	SPRING, TORSION	
155	X-3343-455-1	LEVER (PINCH F) ASSY	
156	3-343-411-01	GEAR (FF GEAR)	
157	X-3343-415-1	TABLE (REV) ASSY, REEL	
158	3-343-439-01	CAP (REEL TABLE)	
159	X-3343-401-1	TABLE ASSY, REEL	
160	3-343-420-01	SPRING, LEAF	
HE1 HRP1	A-2003-504-A	CHASSIS ASSY, HEAD (PB/REC/ERASE) (DECK B)	
HP1	A-2003-503-A	PC BOARD ASSY, HEAD (PB) (DECK A)	

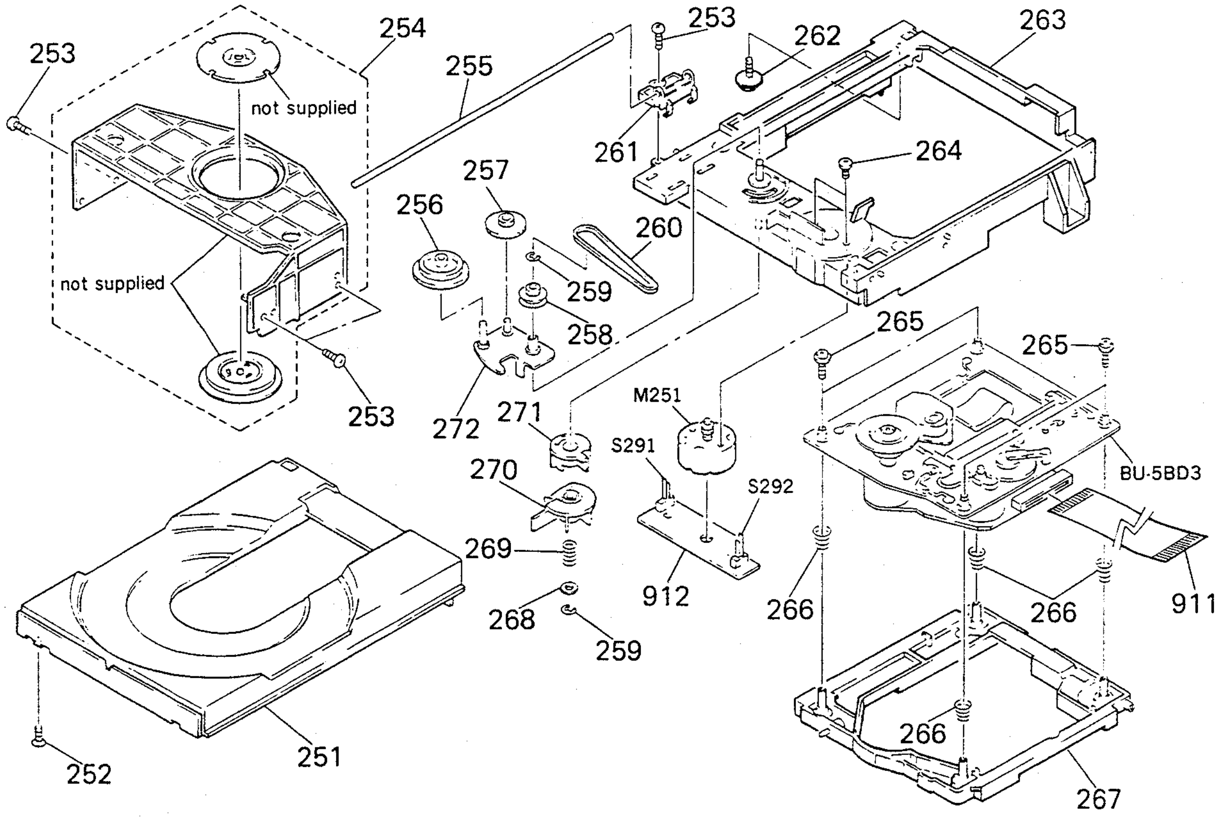
7-5. MECHANISM DECK SECTION (2)

(DECK A : TCM-170RA1)
(DECK B : TCM-170RB7)



Ref. No.	Part No.	Description	Remark
201	3-343-473-01	WASHER, NYLON	
202	3-343-419-01	HOLDER (S SENSOR A)	
203	3-343-453-01	SLIDER (BRAKE PLATE)	
204	3-343-482-01	SPRING, TORSION	
205	3-343-461-01	SLIDER	
206	X-3343-414-1	LEVER (FR ARM) ASSY	
207	3-343-430-01	SPRING, TORSION	
208	7-627-556-28	SCREW +P 2.6X3.5	
209	3-355-801-01	SCREW (BTP 2X18)	
210	* X-3343-407-1	BASE (THRUST RETAINER) ASSY	
211	3-343-404-01	SCREW (PTPWH 2X12)	
212	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
213	3-343-480-01	PLATE, SHIELD	
214	3-343-457-01	SLIDER (REVERSE SLIDER)	
215	3-343-462-01	LEVER	
216	3-343-816-00	BELT (CAPSTAN BELT SQUARE)	
217	X-3343-411-6	FLYWHEEL COMPLETE ASSY	
218	4-605-835-11	WASHER (2.6), POLYSLIDER	
219	3-307-482-00	WASHER, LUMILER	
220	X-3343-454-1	LEVER (TU-R) ASSY	
221	3-343-470-01	GEAR (CAM GEAR)	
222	X-3343-416-7	FLYWHEEL (REV) COMPLETE ASSY	
223	3-343-493-01	LEVER (PM LEVER)	
224	X-3343-453-1	LEVER (TU-F) ASSY	
225	* 3-343-425-01	ARBOR (MOVABLE IRON ARBOR), IRON	
226	* 3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
227	9-911-863-XX	SPACER (THRUST RETAINER) (DECK A)	
908	* 1-624-148-11	LEAF SW (A) BOARD (DECK A)	
908	* 1-624-148-11	LEAF SW (B) BOARD (DECK B)	
909	* 1-624-146-11	MD-B BOARD (DECK B)	
910	* 1-624-147-11	MD-A BOARD (DECK A)	
M1	X-3343-447-1	MOTOR ASSY (DECK A)	
M2	X-3343-447-1	MOTOR ASSY (DECK B)	
PM1	1-454-456-11	SOLENOID, PLUNGER (DECK A)	
PM2	1-454-456-11	SOLENOID, PLUNGER (DECK B)	
S11	1-571-281-21	SWITCH, LEAF (HALF)	
S12	1-571-281-21	SWITCH, LEAF (REC (A)) (DECK B)	
S13	1-571-281-21	SWITCH, LEAF (REC (B)) (DECK B)	
S14	1-571-281-21	SWITCH, LEAF (CrO2)	
S15	1-571-281-21	SWITCH, LEAF (DECK B)	

7-6. CD SECTION (1)
(CDM13A-5BD3)


253
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259
not supplied
258
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265
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M251
S291
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S292
BU-5BD3
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911
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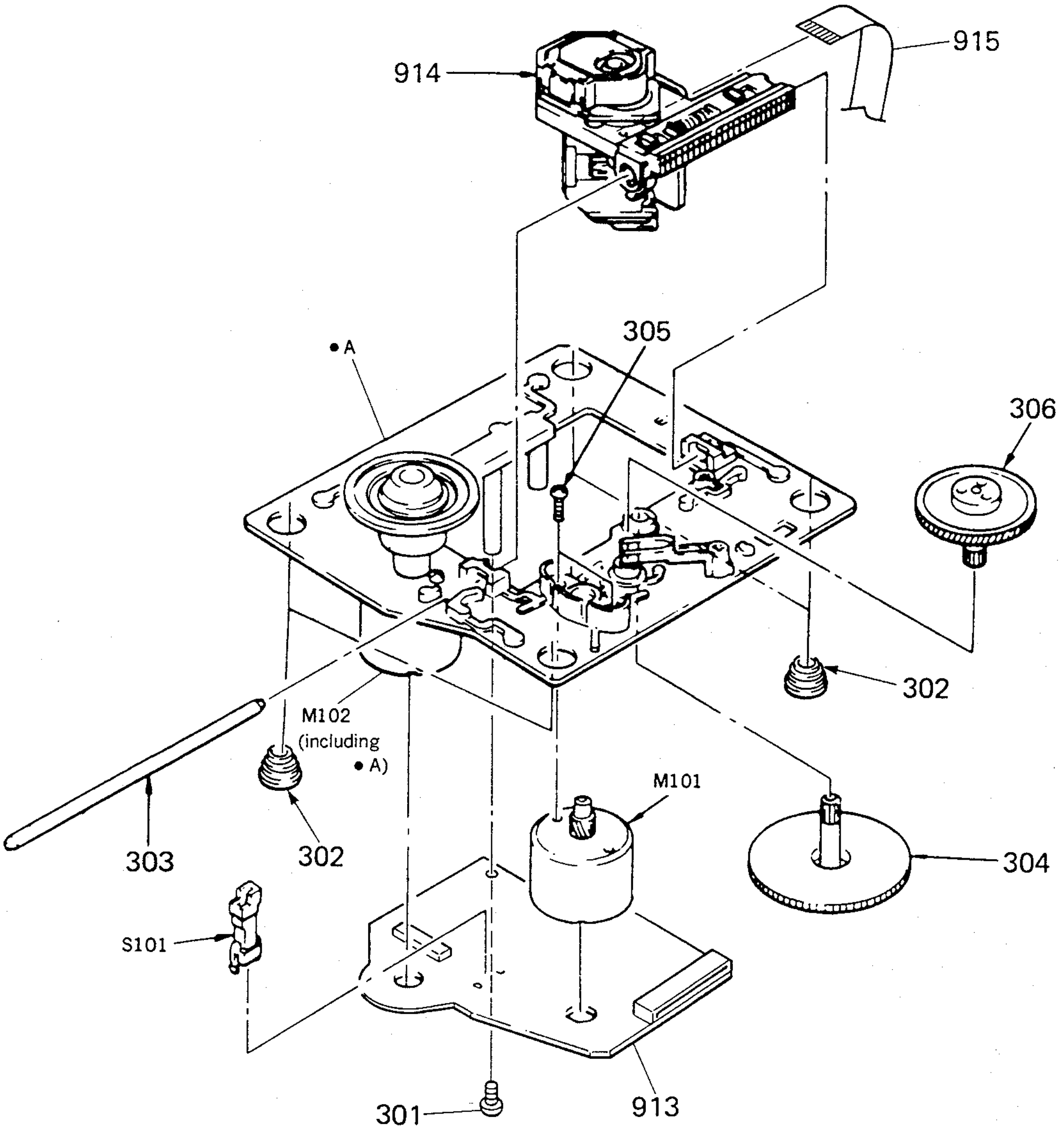
Ref. No.	Part No.	Description	Remark
251	4-929-732-01	TABLE, DISK	
252	7-685-234-19	SCREW +KTP 2.6X8 TYPE2 NON-SLIT	
253	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
254	A-4604-219-A	HOLDER (MG) ASSY	
255	4-929-764-01	SHAFT (TABLE GUIDE)	
256	4-927-620-01	GEAR (P)	
257	4-927-628-01	GEAR (C)	
258	4-927-724-01	PULLEY (B)	
259	7-624-105-04	STOP RING 2.3, TYPE-E	
260	4-927-649-01	BELT	
261	4-929-723-01	GUIDE (T)	
262	* 4-917-583-21	BRACKET, YOKE	
263	X-4929-709-2	CHASSIS (MD) ASSY	
264	7-621-775-10	SCREW +B 2.6X4	
265	4-933-134-01	SCREW (+PTPWH M2.6X6)	
266	4-917-541-01	SPRING (B)	
267	4-929-747-01	HOLDER (BU)	
268	4-927-654-01	WASHER (LIMITER)	
269	3-659-338-00	SPRING, COMPRESSION	
270	4-929-729-01	CAM (B)	
271	4-929-727-01	CAM (A)	
272	X-4929-703-1	ARM ASSY, SWING	
911	1-535-832-12	JUMPER, FILM (WITH TERMINAL)	
912	1-634-461-11	LOADING BOARD	
M251	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	

7-7. CD SECTION (2)
(BU-5BD3)


914
915
305
● A
306
302
M102
(including
● A)
M101
303
302
304
S101
301
913

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
301	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
302	4-933-126-01	INSULATOR (A)	
303	4-917-565-01	SHAFT, SLED	
304	4-917-564-01	GEAR (P), FLATNESS	
305	7-621-255-15	SCREW +P 2X3	
306	4-917-567-01	GEAR (M)	
913	* A-4617-371-A	BD BOARD, COMPLETE	
914	⚠· 8-848-144-11	DEVICE, OPTICAL KSS-240A	
915	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)	

BD

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- CAPACITORS
  uF: μF
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD....

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- G : Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model

Ref.No.	Part No.	Description				Remark
	* A-4617-371-A	BD BOARD, COMPLETE ******************				
		< CAPACITOR >				
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C102	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C103	1-126-094-11	ELECT	4.7uF	20%	16V	
C104	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C105	1-126-154-11	ELECT	47uF	20%	6.3V	
C106	1-126-154-11	ELECT	47uF	20%	6.3V	
C107	1-126-154-11	ELECT	47uF	20%	6.3V	
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C111	1-131-367-00	TANTALUM	22uF	20%	16V	
C112	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V	
C113	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V	
C114	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	50V	
C115	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	50V	
C116	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	50V	
C117	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C118	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C119	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	50V	
C120	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C151	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C152	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C153	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	
C154	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	50V	
C155	1-163-023-00	CERAMIC CHIP	0.015uF	10%	50V	
C171	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C172	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C173	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C174	1-163-038-00	CERAMIC CHIP	0.1uF		25V	

Ref.No.	Part No.	Description				Remark
		< CONNECTOR >				
CN101	1-568-796-11	SOCKET, CONNECTOR 22P				
CN102	1-568-795-11	SOCKET, CONNECTOR 12P				
		< IC >				
IC101	8-752-037-33	IC CXA1372Q				
IC102	8-759-821-94	IC LA6532M				
		< JUMPER RESISTOR >				
J101	1-216-295-00	METAL GLAZE	0	5%	1/10W	
J102	1-216-295-00	METAL GLAZE	0	5%	1/10W	
		< TRANSISTOR >				
Q101	8-729-901-01	TRANSISTOR DTC144EK				
		< RESISTOR >				
R101	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R102	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R103	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R104	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R105	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R106	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W	
R108	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R109	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R110	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R111	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R112	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R113	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R114	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R152	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R153	1-216-085-00	METAL GLAZE	33K	5%	1/10W	

BD DISPLAY, TRANSFORMER, JUMPER, VR, SW

Ref.No.	Part No.	Description	Remark
R154	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R155	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R156	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R157	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R158	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R159	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R160	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R171	1-216-001-00	METAL GLAZE 10 5%	1/10W
R172	1-216-001-00	METAL GLAZE 10 5%	1/10W
R173	1-216-001-00	METAL GLAZE 10 5%	1/10W
R174	1-216-001-00	METAL GLAZE 10 5%	1/10W
		< VARIABLE RESISTOR >	
RV101	1-238-016-11	RES, ADJ, CARBON 10K	
RV102	1-238-016-11	RES, ADJ, CARBON 10K	
		< SWITCH >	
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)	

****

* A-4341-540-A DISPLAY BOARD, COMPLETE(H66:AEP, H1200)
* A-4341-541-A DISPLAY BOARD, COMPLETE(H66:G)
* A-4341-543-A DISPLAY BOARD, COMPLETE(H66:IT)
* A-4341-545-A DISPLAY BOARD, COMPLETE(H70)
* A-4341-546-A DISPLAY BOARD, COMPLETE(H77:AEP, H1400)
* A-4341-548-A DISPLAY BOARD, COMPLETE(H77:IT)
* A-4341-549-A DISPLAY BOARD, COMPLETE(H77:G)
* 1-634-474-11 TRANSFORMER BOARD
* 1-634-475-11 JUMPER BOARD
* 1-634-476-11 VR BOARD
* 1-634-477-11 SW BOARD

****

* 1-533-213-31 HOLDER, FUSE
* 1-533-213-31 HOLDER, FUSE (H70)
* 4-932-810-11 CUSHION (FL)

Ref.No.	Part No.	Description	Remark
		< CAPACITOR >	
C410	1-126-157-11	ELECT 10uF 20%	16V
C416	1-124-463-00	ELECT 0.1uF 20%	50V
C417	1-126-157-11	ELECT 10uF 20%	16V
C418	1-126-157-11	ELECT 10uF 20%	16V
C419	1-126-157-11	ELECT 10uF 20%	16V
C420	1-126-157-11	ELECT 10uF 20%	16V
C421	1-126-157-11	ELECT 10uF 20%	16V
C422	1-126-157-11	ELECT 10uF 20%	16V
C423	1-164-159-11	CERAMIC 0.1uF	50V
C460	1-126-157-11	ELECT 10uF 20%	16V
C502	1-162-294-31	CERAMIC 0.001uF 10%	50V
C504	1-162-289-31	CERAMIC 390PF 10%	50V
C505	1-161-329-00	CERAMIC 0.0068uF 30%	16V
C506	1-162-294-31	CERAMIC 0.001uF 10%	50V
C507	1-161-494-00	CERAMIC 0.022uF	25V
C508	1-161-327-00	CERAMIC 0.0033uF 30%	16V
C509	1-164-159-11	CERAMIC 0.1uF	50V
C510	1-162-306-11	CERAMIC 0.01uF 20%	16V
C511	1-124-464-11	ELECT 0.22uF 20%	50V
C512	1-161-494-00	CERAMIC 0.022uF	25V
C513	1-126-160-11	ELECT 1uF 20%	50V
C514	1-136-163-00	FILM 0.068uF 5%	50V
C515	1-136-163-00	FILM 0.068uF 5%	50V
C521	1-162-286-31	CERAMIC 220PF 10%	50V(H70, H77, H1400)
C522	1-162-286-31	CERAMIC 220PF 10%	50V(H70, H77, H1400)
C523	1-162-286-31	CERAMIC 220PF 10%	50V(H70, H77, H1400)
C524	1-162-286-31	CERAMIC 220PF 10%	50V(H70, H77, H1400)
C525	1-162-286-31	CERAMIC 220PF 10%	50V(H70, H77, H1400)
C539	1-162-282-31	CERAMIC 100PF 10%	50V
C540	1-162-282-31	CERAMIC 100PF 10%	50V
C541	1-162-282-31	CERAMIC 100PF 10%	50V
C542	1-162-294-31	CERAMIC 0.001uF 10%	50V
C543	1-162-294-31	CERAMIC 0.001uF 10%	50V
C544	1-162-294-31	CERAMIC 0.001uF 10%	50V
C545	1-162-294-31	CERAMIC 0.001uF 10%	50V
C546	1-164-159-11	CERAMIC 0.1uF	50V
C547	1-162-294-31	CERAMIC 0.001uF 10%	50V
C548	1-164-159-11	CERAMIC 0.1uF	50V
C549	1-164-159-11	CERAMIC 0.1uF	50V
C552	1-162-294-31	CERAMIC 0.001uF 10%	50V
C554	1-162-289-31	CERAMIC 390PF 10%	50V
C555	1-161-329-00	CERAMIC 0.0068uF 30%	16V
C556	1-162-294-31	CERAMIC 0.001uF 10%	50V
C557	1-161-494-00	CERAMIC 0.022uF	25V
C558	1-161-327-00	CERAMIC 0.0033uF 30%	16V
C559	1-164-159-11	CERAMIC 0.1uF	50V
C560	1-162-306-11	CERAMIC 0.01uF 20%	16V
C561	1-124-464-11	ELECT 0.22uF 20%	50V
C562	1-161-494-00	CERAMIC 0.022uF	25V
C563	1-126-160-11	ELECT 1uF 20%	50V
C564	1-136-163-00	FILM 0.068uF 5%	50V
C565	1-136-163-00	FILM 0.068uF 5%	50V
C566	1-162-306-11	CERAMIC 0.01uF 20%	16V
C569	1-126-160-11	ELECT 1uF 20%	50V
C570	1-164-159-11	CERAMIC 0.1uF	50V
C571	1-126-157-11	ELECT 10uF 20%	16V
C572	1-126-157-11	ELECT 10uF 20%	16V
C573	1-126-163-11	ELECT 4.7uF 20%	50V
C574	1-126-157-11	ELECT 10uF 20%	16V(H70, H77, H1400)
C575	1-161-374-11	CERAMIC 0.0015uF 20%	50V(H70, H77, H1400)
C576	1-126-153-11	ELECT 22uF 20%	6.3V(H70, H77, H1400)
C578	1-124-257-00	ELECT 2.2uF 20%	50V(H70, H77, H1400)

DISPLAY, TRANSFORMER, JUMPER, VR, SW

Ref. No.	Part No.	Description	Remark
C579	1-124-257-00	ELECT 2.2uF 20% 50V	(H70, H77, H1400)
C580	1-124-465-00	ELECT 0.47uF 20% 50V	(H70, H77, H1400)
C581	1-164-159-11	CERAMIC 0.1uF 50V	(H70, H77, H1400)
C582	1-164-159-11	CERAMIC 0.1uF 50V	(H70, H77, H1400)
C583	1-161-494-00	CERAMIC 0.022uF 25V	(H70, H77, H1400)
C584	1-161-494-00	CERAMIC 0.022uF 25V	(H70, H77, H1400)
C585	1-161-377-00	CERAMIC 0.0047uF 30% 16V	(H70, H77, H1400)
C586	1-161-374-11	CERAMIC 0.0015uF 20% 50V	(H70, H77, H1400)
C587	1-124-257-00	ELECT 2.2uF 20% 50V	(H70, H77, H1400)
C588	1-124-257-00	ELECT 2.2uF 20% 50V	(H70, H77, H1400)
C589	1-124-257-00	ELECT 2.2uF 20% 50V	(H70, H77, H1400)
C590	1-124-257-00	ELECT 2.2uF 20% 50V	(H70, H77, H1400)
C591	1-124-257-00	ELECT 2.2uF 20% 50V	(H70, H77, H1400)
C592	1-162-197-31	CERAMIC 6.8PF 10% 50V	
C593	1-162-197-31	CERAMIC 6.8PF 10% 50V	
C594	1-102-947-00	CERAMIC 10PF 5% 50V	
C595	1-102-947-00	CERAMIC 10PF 5% 50V	
C597	1-126-163-11	ELECT 4.7uF 20% 50V	
C599	1-136-173-00	FILM 0.47uF 5% 50V	(H70, H77, H1400)
C901	1-164-159-11	CERAMIC 0.1uF 50V	
C902	1-164-159-11	CERAMIC 0.1uF 50V	
C903	1-126-160-11	ELECT 1uF 20% 50V	
C905	⚠ 1-126-233-11	ELECT 22uF 20% 50V	
C906	⚠ 1-124-556-11	ELECT 2200uF 20% 16V	
C907	1-124-572-11	ELECT 100uF 20% 63V	
C909	1-126-163-11	ELECT 4.7uF 20% 50V	
C911	1-126-163-11	ELECT 4.7uF 20% 50V	
C912	1-126-157-11	ELECT 10uF 20% 16V	
C913	⚠ 1-126-163-11	ELECT 4.7uF 20% 50V	
C915	1-126-163-11	ELECT 4.7uF 20% 50V	
C916	1-126-163-11	ELECT 4.7uF 20% 50V	
C917	1-126-163-11	ELECT 4.7uF 20% 50V	
C920	1-164-159-11	CERAMIC 0.1uF 50V	
C921	1-164-159-11	CERAMIC 0.1uF 50V	
C922	⚠ 1-126-163-11	ELECT 4.7uF 20% 50V	
C9001	1-161-379-00	CERAMIC 0.01uF 30% 16V	(G, IT)
C9002	1-164-159-11	CERAMIC 0.1uF 50V	(G, IT)
C9003	1-164-159-11	CERAMIC 0.1uF 50V	(G, IT)
C9004	1-162-294-31	CERAMIC 0.001uF 10% 50V	(G, IT)
C9005	1-162-294-31	CERAMIC 0.001uF 10% 50V	(G, IT)
C9006	1-164-159-11	CERAMIC 0.1uF 50V	(G, IT)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN203	* 1-569-156-11	SOCKET, CONNECTOR 10P	
CN301	1-569-225-11	SOCKET, CONNECTOR 14P	
CN401B	* 1-569-418-11	PIN, CONNECTOR 13P	
CN402	* 1-568-856-11	SOCKET, CONNECTOR 13P	
CN403	* 1-568-827-11	SOCKET, CONNECTOR 8P	
CN404	* 1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN501	* 1-569-156-11	SOCKET, CONNECTOR 10P	
CN502	* 1-569-156-11	SOCKET, CONNECTOR 10P	
CN503	* 1-509-931-11	SOCKET, CONNECTOR	
CN901	⚠ 1-526-930-11	INLET, AC (~AC IN)	(E)
CN901	⚠ 1-526-931-11	INLET, AC (~AC IN)	(EXCEPT E)
CN902	* 1-568-858-11	SOCKET, CONNECTOR 15P	
CN903	* 1-565-484-11	CONNECTOR, BOARD TO BOARD 8P	

< COMPOSITION CIRCUIT BLOCK >

Ref. No.	Part No.	Description	Remark
CP502	* 1-233-216-11	COMPOSITION CIRCUIT BLOCK (220PX13)	(H70, H77, H1400)
CP503	* 1-233-216-11	COMPOSITION CIRCUIT BLOCK (220PX13)	
CP504	* 1-233-216-11	COMPOSITION CIRCUIT BLOCK (220PX13)	

< DIODE >

Ref. No.	Part No.	Description	Remark
D206	8-719-984-16	LED GL-1HY112-CD (STOP)	
D207	8-719-984-17	LED GL-1EG112-CD (PLAY)	
D301	8-719-984-17	LED GL-1EG112-CD (A▷)	
D302	8-719-984-17	LED GL-1EG112-CD (A◁)	
D303	8-719-984-17	LED GL-1EG112-CD (B▷)	
D304	8-719-984-17	LED GL-1EG112-CD (B◁)	
D305	8-719-984-17	LED GL-1EG112-CD (AMS/BLK)	
D306	8-719-984-15	LED GL-1HD112-DE (TAPE/HIGH)	
D307	8-719-984-15	LED GL-1HD112-DE (CD)	
D308	8-719-984-15	LED GL-1HD112-DE (O)	
D309	8-719-984-16	LED GL-1HY112-CD (STOP)	
D406	8-719-912-20	DIODE 1SS120	
D521	8-719-313-38	LED SEL1210RM-LC05-CD (STANDBY)	
D522	8-719-313-39	LED SEL1910DM-LC05-CD (DBFB)	
D523	8-719-313-39	LED SEL1910DM-LC05-CD (S-SUR)	
D574	8-719-912-20	DIODE 1SS120	
D576	8-719-912-20	DIODE 1SS120	
D577	8-719-912-20	DIODE 1SS120	
D578	8-719-912-20	DIODE 1SS120	
D579	8-719-912-20	DIODE 1SS120	
D580	8-719-912-20	DIODE 1SS120	
D581	8-719-912-20	DIODE 1SS120	
D582	8-719-912-20	DIODE 1SS120	
D583	8-719-912-20	DIODE 1SS120	
D585	8-719-912-20	DIODE 1SS120	(H70)
D588	8-719-912-20	DIODE 1SS120	(EXCEPT IT)
D589	8-719-912-20	DIODE 1SS120	(IT)
D590	8-719-912-20	DIODE 1SS120	(H70)
D591	8-719-912-20	DIODE 1SS120	(H70, H77, H1400)
D592	8-719-912-20	DIODE 1SS120	(H70, H77, H1400)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
D593	8-719-912-20	DIODE 1SS120 (H70. H77. H1400)	
D594	8-719-912-20	DIODE 1SS120 (H70. H77. H1400)	
D595	8-719-912-20	DIODE 1SS120 (H70. H77. H1400)	
D598	8-719-001-21	DIODE UZL-9H1	
D901 ⚠·	8-719-912-20	DIODE 1SS120	
D902 ⚠·	8-719-912-20	DIODE 1SS120	
D903 ⚠·	8-719-200-82	DIODE 11ES2	
D904 ⚠·	8-719-200-82	DIODE 11ES2	
D907	8-719-200-82	DIODE 11ES2	
D908	8-719-200-82	DIODE 11ES2	
D909	8-719-312-09	DIODE RBA-402	
D910	8-719-002-33	DIODE UZL-24L	
D911	8-719-014-64	DIODE UZP-5. 1BC	
D912	8-719-933-36	DIODE HZS6B1L	
		< INDUCTOR >	
FB901⚠·*	1-410-858-11	INDUCTOR (G. IT)	
FB902⚠·*	1-410-858-11	INDUCTOR (G. IT)	
FB903⚠·*	1-410-858-11	INDUCTOR (G. IT)	
		< FLUORESCENT INDICATOR >	
FLT501	1-519-577-11	INDICATOR TUBE. FLUORESCENT	
FLT502	1-519-578-11	INDICATOR TUBE. FLUORESCENT (H70. H77. H1400)	
		< IC >	
IC406	8-759-820-62	IC LB1639	
IC501	8-759-630-99	IC M5226FP	
IC502	8-759-634-50	IC M5218AL	
IC503	8-759-634-50	IC M5218AL (H70. H77. H1400)	
IC504	8-759-820-07	IC LC7566 (H70. H77. H1400)	
IC505	8-759-153-84	IC uPD75212ACW-273	
IC506	8-749-922-36	IC GP1U50XB	
IC551	8-759-630-99	IC M5226FP	
IC901	8-759-602-66	IC M5230L-A	
		< IC LINK >	
ICP999⚠·	1-532-783-21	LINK. IC (5A) (H70)	
ICP999⚠·	1-532-846-21	LINK. IC PRF5000 (5A) (EXCEPT H70)	
		< TRANSISTOR >	
Q351	8-729-900-61	TRANSISTOR DTA114ES	
Q352	8-729-900-61	TRANSISTOR DTA114ES	
Q353	8-729-900-61	TRANSISTOR DTA114ES	
Q354	8-729-900-61	TRANSISTOR DTA114ES	
Q406	8-729-904-39	TRANSISTOR DTC114TS	
Q407	8-729-904-39	TRANSISTOR DTC114TS	
Q456	8-729-904-39	TRANSISTOR DTC114TS	
Q457	8-729-904-39	TRANSISTOR DTC114TS	
Q501	8-729-904-39	TRANSISTOR DTC114TS	
Q551	8-729-904-39	TRANSISTOR DTC114TS	
Q571	8-729-900-61	TRANSISTOR DTA114ES	
Q572	8-729-900-61	TRANSISTOR DTA114ES	
Q573	8-729-224-61	TRANSISTOR 2SK246-Y	
Q574	8-729-900-80	TRANSISTOR DTC114ES	
Q575	8-729-900-80	TRANSISTOR DTC114ES	
Q576	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q901	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q903	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q904	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q905	8-729-920-98	TRANSISTOR 2SD1761-EF	
Q906	8-729-920-98	TRANSISTOR 2SD1761-EF	
Q907	8-729-900-80	TRANSISTOR DTC114ES	
Q908	8-729-900-80	TRANSISTOR DTC114ES	
		< RESISTOR >	
R221	1-249-409-11	CARBON 220 5% 1/4W	
R222	1-249-409-11	CARBON 220 5% 1/4W	
R223	1-249-437-11	CARBON 47K 5% 1/4W	
R224	1-249-437-11	CARBON 47K 5% 1/4W	
R225	1-249-437-11	CARBON 47K 5% 1/4W	
R226	1-249-437-11	CARBON 47K 5% 1/4W	
R301	1-249-407-11	CARBON 150 5% 1/4W	
R302	1-249-411-11	CARBON 330 5% 1/4W	
R303	1-249-407-11	CARBON 150 5% 1/4W	
R304	1-249-411-11	CARBON 330 5% 1/4W	
R305	1-249-411-11	CARBON 330 5% 1/4W	
R306	1-249-412-11	CARBON 390 5% 1/4W	
R307	1-249-416-11	CARBON 820 5% 1/4W	
R308	1-249-412-11	CARBON 390 5% 1/4W	
R309	1-249-411-11	CARBON 330 5% 1/4W	
R310	1-247-832-11	CARBON 1. 1K 5% 1/4W	
R311	1-249-417-11	CARBON 1K 5% 1/4W	
R312	1-249-420-11	CARBON 1. 8K 5% 1/4W	
R313	1-249-424-11	CARBON 3. 9K 5% 1/4W	
R314	1-249-407-11	CARBON 150 5% 1/4W	
R315	1-249-409-11	CARBON 220 5% 1/4W	
R316	1-249-411-11	CARBON 330 5% 1/4W	
R317	1-247-832-11	CARBON 1. 1K 5% 1/4W	
R318	1-249-417-11	CARBON 1K 5% 1/4W	
R319	1-249-430-11	CARBON 12K 5% 1/4W	
R320	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R416	1-249-405-11	CARBON 100 5% 1/4W	
R417	1-249-425-11	CARBON 4. 7K 5% 1/4W	
R418	1-249-429-11	CARBON 10K 5% 1/4W	
R419	1-249-417-11	CARBON 1K 5% 1/4W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

DISPLAY, TRANSFORMER, JUMPER, VR, SW

Ref. No.	Part No.	Description				Remark
R426	1-249-417-11	CARBON	1K	5%	1/4W	
R427	1-249-441-11	CARBON	100K	5%	1/4W	
R428	1-247-903-00	CARBON	1M	5%	1/4W	
R429	1-249-417-11	CARBON	1K	5%	1/4W	
R430	1-249-425-11	CARBON	4.7K	5%	1/4W	
R431	1-249-425-11	CARBON	4.7K	5%	1/4W	
R432	1-249-429-11	CARBON	10K	5%	1/4W	
R457	1-249-429-11	CARBON	10K	5%	1/4W	
R466	1-249-405-11	CARBON	100	5%	1/4W	
R467	1-249-425-11	CARBON	4.7K	5%	1/4W	
R468	1-249-429-11	CARBON	10K	5%	1/4W	
R469	1-249-417-11	CARBON	1K	5%	1/4W	
R486	1-249-413-11	CARBON	470	5%	1/4W	
R487	1-249-429-11	CARBON	10K	5%	1/4W	
R500	1-249-414-11	CARBON	560	5%	1/4W	
R501	1-247-903-00	CARBON	1M	5%	1/4W	
R502	1-249-425-11	CARBON	4.7K	5%	1/4W	
R503	1-249-441-11	CARBON	100K	5%	1/4W	
R504	1-247-903-00	CARBON	1M	5%	1/4W	
R505	1-249-419-11	CARBON	1.5K	5%	1/4W	
R506	1-249-434-11	CARBON	27K	5%	1/4W	
R507	1-247-903-00	CARBON	1M	5%	1/4W	
R522	1-249-409-11	CARBON	220	5%	1/4W	
R523	1-249-409-11	CARBON	220	5%	1/4W	
R524	1-249-439-11	CARBON	68K	5%	1/4W	
R525	1-249-417-11	CARBON	1K	5%	1/4W	
R526	1-249-405-11	CARBON	100	5%	1/4W	
R527	1-249-405-11	CARBON	100	5%	1/4W	
R528	1-249-405-11	CARBON	100	5%	1/4W	
R529	1-249-405-11	CARBON	100	5%	1/4W	
R530	1-249-405-11	CARBON	100	5%	1/4W	
R531	1-249-405-11	CARBON	100	5%	1/4W	
R532	1-249-405-11	CARBON	100	5%	1/4W	
R533	1-249-405-11	CARBON	100	5%	1/4W	
R534	1-249-405-11	CARBON	100	5%	1/4W	
R535	1-249-405-11	CARBON	100	5%	1/4W	
R536	1-249-405-11	CARBON	100	5%	1/4W	
R537	1-249-429-11	CARBON	10K	5%	1/4W	
R538	1-249-405-11	CARBON	100	5%	1/4W	
R539	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R540	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R541	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R542	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R543	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R551	1-247-903-00	CARBON	1M	5%	1/4W	
R552	1-249-425-11	CARBON	4.7K	5%	1/4W	
R553	1-249-441-11	CARBON	100K	5%	1/4W	
R554	1-247-903-00	CARBON	1M	5%	1/4W	
R555	1-249-419-11	CARBON	1.5K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R556	1-249-434-11	CARBON	27K	5%	1/4W	
R557	1-247-903-00	CARBON	1M	5%	1/4W	
R559	1-249-429-11	CARBON	10K	5%	1/4W	
R564	1-247-887-00	CARBON	220K	5%	1/4W	
R568	1-249-441-11	CARBON	100K	5%	1/4W	
R569	1-249-429-11	CARBON	10K	5%	1/4W	
R570	1-249-417-11	CARBON	1K	5%	1/4W	
R571	1-249-441-11	CARBON	100K	5%	1/4W	
R572	1-247-891-00	CARBON	330K	5%	1/4W	
R573	1-249-425-11	CARBON	4.7K	5%	1/4W	
R574	1-249-441-11	CARBON	100K	5%	1/4W	
R576	1-249-395-11	CARBON	15	5%	1/4W(H70,H77,H1400)	
R577	1-249-405-11	CARBON	100	5%	1/4W	
R578	1-247-903-00	CARBON	1M	5%	1/4W(H70,H77,H1400)	
R579	1-249-432-11	CARBON	18K	5%	1/4W(H70,H77,H1400)	
R580	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R581	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R582	1-249-417-11	CARBON	1K	5%	1/4W(H70,H77,H1400)	
R583	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R584	1-249-417-11	CARBON	1K	5%	1/4W(H70,H77,H1400)	
R585	1-249-429-11	CARBON	10K	5%	1/4W(H70,H77,H1400)	
R586	1-249-429-11	CARBON	10K	5%	1/4W(H70,H77,H1400)	
R587	1-249-429-11	CARBON	10K	5%	1/4W(H70,H77,H1400)	
R588	1-249-429-11	CARBON	10K	5%	1/4W(H70,H77,H1400)	
R589	1-249-417-11	CARBON	1K	5%	1/4W(H70,H77,H1400)	
R590	1-249-417-11	CARBON	1K	5%	1/4W(H70,H77,H1400)	
R591	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R592	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R593	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R594	1-249-441-11	CARBON	100K	5%	1/4W(H70,H77,H1400)	
R595	1-249-437-11	CARBON	47K	5%	1/4W(H70,H77,H1400)	
R596	1-249-429-11	CARBON	10K	5%	1/4W	
R597	1-249-417-11	CARBON	1K	5%	1/4W(H70,H77,H1400)	
R598	1-249-411-11	CARBON	330	5%	1/4W	
R901	1-249-419-11	CARBON	1.5K	5%	1/4W	
R902	1-249-429-11	CARBON	10K	5%	1/4W	
R903	1-249-421-11	CARBON	2.2K	5%	1/4W	
R904	1-249-433-11	CARBON	22K	5%	1/4W	
R905 ⚠	1-212-934-00	FUSIBLE	1	5%	1/2W	F
R906 ⚠	1-212-934-00	FUSIBLE	1	5%	1/2W	F
R907 ⚠	1-212-934-00	FUSIBLE	1	5%	1/2W	F
R908	1-249-425-11	CARBON	4.7K	5%	1/4W	
R909	1-249-433-11	CARBON	22K	5%	1/4W	
R910	1-247-903-00	CARBON	1M	5%	1/4W	
R911	1-249-405-11	CARBON	100	5%	1/4W	
R912	1-249-432-11	CARBON	18K	5%	1/4W	
R913	1-249-432-11	CARBON	18K	5%	1/4W	
R914	1-247-842-11	CARBON	3K	5%	1/4W	
R915	1-249-429-11	CARBON	10K	5%	1/4W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
R517	1-249-413-11	CARBON 470 5% 1/4W	
R2001	1-247-891-00	CARBON 330K 5% 1/4W	
		< COMPOSITION CIRCUIT BLOCK >	
RB502	1-233-206-11	COMPOSITION CIRCUIT BLOCK (100KX13) (H70, H77, H1400)	
		< VARIABLE RESISTOR >	
RV406	1-238-865-11	RES, VAR, CARBON (MOTOR) 100KX2 (VOLUME) (INCLUDING VOL LED)	
RV501	1-238-457-11	RES, VAR, CARBON 250K/250K (12kHz)	
RV502	1-238-457-11	RES, VAR, CARBON 250K/250K (4kHz)	
RV503	1-238-457-11	RES, VAR, CARBON 250K/250K (1kHz)	
RV504	1-238-457-11	RES, VAR, CARBON 250K/250K (400Hz)	
RV505	1-238-457-11	RES, VAR, CARBON 250K/250K (100Hz)	
		< SWITCH >	
S201	1-572-184-11	SWITCH, KEYBOARD (EDIT)	
S202	1-572-184-11	SWITCH, KEYBOARD (■)	
S203	1-572-184-11	SWITCH, KEYBOARD (▷❚❚)	
S204	1-572-184-11	SWITCH, KEYBOARD (⏏OPEN/CLOSE)	
S205	1-572-184-11	SWITCH, KEYBOARD (▷▷❚)	
S206	1-572-184-11	SWITCH, KEYBOARD (❚◁◁)	
S207	1-572-184-11	SWITCH, KEYBOARD (▶▶)	
S208	1-572-184-11	SWITCH, KEYBOARD (◀◀)	
S209	1-572-184-11	SWITCH, KEYBOARD (REPEAT)	
S210	1-572-184-11	SWITCH, KEYBOARD (CONTINUE)	
S211	1-572-184-11	SWITCH, KEYBOARD (SHUFFLE)	
S212	1-572-184-11	SWITCH, KEYBOARD (PROGRAM)	
S214	1-572-184-11	SWITCH, KEYBOARD (TIME)	
S301	1-572-184-11	SWITCH, KEYBOARD (■) (DECK A)	
S302	1-572-184-11	SWITCH, KEYBOARD (◀◀) (DECK A)	
S303	1-572-184-11	SWITCH, KEYBOARD (◁) (DECK A)	
S304	1-572-184-11	SWITCH, KEYBOARD (▷) (DECK A)	
S305	1-572-184-11	SWITCH, KEYBOARD (▶▶) (DECK A)	
S306	1-572-184-11	SWITCH, KEYBOARD (■) (DECK B)	
S307	1-572-184-11	SWITCH, KEYBOARD (◀◀) (DECK B)	
S308	1-572-184-11	SWITCH, KEYBOARD (◁) (DECK B)	
S309	1-572-184-11	SWITCH, KEYBOARD (▷) (DECK B)	
S310	1-572-184-11	SWITCH, KEYBOARD (▶▶) (DECK B)	
S311	1-572-184-11	SWITCH, KEYBOARD (AMS/BLK SKIP)	
S312	1-572-184-11	SWITCH, KEYBOARD (TAPE DUBBING HIGH SPEED)	
S313	1-572-184-11	SWITCH, KEYBOARD (CD SYNCHRO)	
S314	1-572-184-11	SWITCH, KEYBOARD (REC)	
S315	1-572-184-11	SWITCH, KEYBOARD (PAUSE)	
S351	1-570-849-11	SWITCH, SLIDE (DOLBY NR)	
S352	1-570-837-11	SWITCH, SLIDE (DIRECTION MODE)	
S501	1-572-184-11	SWITCH, KEYBOARD (TIMER CONTROL)	
S502	1-572-184-11	SWITCH, KEYBOARD (SLEEP)	
S503	1-572-184-11	SWITCH, KEYBOARD (TIMER SET)	
S504	1-572-184-11	SWITCH, KEYBOARD (CLOCK SET)	
S505	1-572-184-11	SWITCH, KEYBOARD (CLOCK DISPLAY)	
S506	1-572-184-11	SWITCH, KEYBOARD (POWER)	
S507	1-572-184-11	SWITCH, KEYBOARD (DBFB)	
S508	1-572-184-11	SWITCH, KEYBOARD (S-SUR)	
S509	1-572-184-11	SWITCH, KEYBOARD (TAPE)	
S510	1-572-184-11	SWITCH, KEYBOARD (CD)	
S511	1-572-184-11	SWITCH, KEYBOARD (TUNER)	
S512	1-572-184-11	SWITCH, KEYBOARD (PHONO) (EXCEPT H70)	
S512	1-572-184-11	SWITCH, KEYBOARD (VIDEO/AUX) (H70)	
S513	1-572-184-11	SWITCH, KEYBOARD (BAND)	
S514	1-572-184-11	SWITCH, KEYBOARD (TUNING -)	
S515	1-572-184-11	SWITCH, KEYBOARD (TUNING +)	
S516	1-572-184-11	SWITCH, KEYBOARD (AUTO)	
S517	1-572-184-11	SWITCH, KEYBOARD (MEMORY)	
S518	1-572-184-11	SWITCH, KEYBOARD (ENTER)	
S519	1-572-184-11	SWITCH, KEYBOARD (NEXT)	
S520	1-572-184-11	SWITCH, KEYBOARD (SHIFT)	
S521	1-572-184-11	SWITCH, KEYBOARD (PRESET/TIMER -)	
S522	1-572-184-11	SWITCH, KEYBOARD (PRESET/TIMER +)	
S901 ⚠	1-571-722-11	SWITCH, VOLTAGE SELECTION (VOLTAGE SELECTOR) (H70)	
		< CRYSTAL >	
X501	1-567-821-21	VIBRATOR, CRYSTAL (4.19MHz)	
X502	1-527-997-21	VIBRATOR, CRYSTAL (32kHz)	

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Ref. No.	Part No.	Description	Remark
*	1-624-148-11	LEAF SW (A) BOARD *****************	
		< CONNECTOR >	
CNP11A	1-564-501-11	PIN, CONNECTOR 8P	
		< DIODE >	
D11A	8-719-107-94	DIODE 1SS202-1	
		< PHOTO SENSOR >	
Q12A	8-719-939-23	PHOTO SENSOR GP-2S09-C	
		< RESISTOR >	
R14A	1-249-408-11	CARBON 180 5% 1/4W	

LEAF SW (A) | LEAF SW (B) | LOADING | MAIN, JACK, CAPACITOR, POWER

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S11A	1-571-281-21	SWITCH, LEAF (HALF)	
S14A	1-571-281-21	SWITCH, LEAF (CrO2)	

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Ref. No.	Part No.	Description	Remark
	* 1-624-148-11	LEAF SW (B) BOARD #################	
		< CONNECTOR >	
CNP11B	1-506-615-11	PIN, CONNECTOR 9P	
		< DIODE >	
D11B	8-719-107-94	DIODE 1SS202-1	
		< PHOTO SENSOR >	
Q12B	8-719-939-23	PHOTO SENSOR GP-2S09-C	
		< RESISTOR >	
R11B	1-247-834-11	CARBON 1.3K 5% 1/4W	
R12B	1-249-414-11	CARBON 560 5% 1/4W	
R13B	1-247-818-11	CARBON 300 5% 1/4W	
R14B	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S11B	1-571-281-21	SWITCH, LEAF (HALF)	
S12B	1-571-281-21	SWITCH, LEAF (REC (A))	
S13B	1-571-281-21	SWITCH, LEAF (REC (B))	
S14B	1-571-281-21	SWITCH, LEAF (CrO2)	
S15B	1-571-281-21	SWITCH, LEAF	

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Ref. No.	Part No.	Description	Remark
	1-634-461-11	LOADING BOARD #############	
		< CONNECTOR >	
CN291	* 1-564-498-11	PIN, CONNECTOR 5P	
		< SWITCH >	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	

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Ref. No.	Part No.	Description	Remark
	* A-4345-098-A	MAIN BOARD, COMPLETE (AEP, UK)	
	* A-4345-099-A	MAIN BOARD, COMPLETE (G, IT)	
	* A-4345-100-A	MAIN BOARD, COMPLETE (H70)	
	* 1-634-483-11	JACK BOARD	
	* 1-634-484-11	CAPACITOR BOARD	
	* 1-634-485-11	POWER BOARD ##############################	

Ref. No.	Part No.	Description	Remark
	* 4-925-530-01	PLATE, GROUND	
		< CAPACITOR >	
C1	1-162-195-31	CERAMIC 4.7PF 10% 50V	(EXCEPT G, IT)
C2	1-123-875-11	ELECT 10uF 20% 50V	
C3	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C4	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C5	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C6	1-164-159-11	CERAMIC 0.1uF 50V	(H70)
C7	1-164-159-11	CERAMIC 0.1uF 50V	
C8	1-161-379-00	CERAMIC 0.01uF 20% 25V	(EXCEPT H70)
C9	1-102-120-00	CERAMIC 0.0018uF 10% 50V	(EXCEPT H70)
C10	1-161-374-11	CERAMIC 0.0015uF 20% 50V	(EXCEPT H70)
C22	1-102-947-00	CERAMIC 10PF 0.5PF 50V	(H70)
C23	1-136-162-00	FILM 0.056uF 5% 50V	(H70)
C24	1-136-161-00	FILM 0.047uF 5% 50V	(H70)
C51	1-164-056-11	CERAMIC 27PF 5% 50V	
C52	1-164-056-11	CERAMIC 27PF 5% 50V	
C53	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C54	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C55	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C56	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C57	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C58	1-123-875-11	ELECT 10uF 20% 50V	
C59	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C60	1-124-477-11	ELECT 47uF 20% 25V	
C61	1-124-925-11	ELECT 2.2uF 20% 100V	
C62	1-136-153-00	FILM 0.01uF 5% 50V	
C63	1-124-463-00	ELECT 0.1uF 20% 50V	(EXCEPT G, IT)
C64	1-124-902-00	ELECT 0.47uF 20% 50V	(EXCEPT H70)
C65	1-136-157-00	FILM 0.022uF 5% 50V	(EXCEPT H70)
C66	1-136-157-00	FILM 0.022uF 5% 50V	(EXCEPT H70)
C81	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C82	1-124-472-11	ELECT 470uF 20% 10V	
C83	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C84	1-123-875-11	ELECT 10uF 20% 50V	
C85	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C86	1-162-282-31	CERAMIC 100PF 10% 50V	
C87	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C88	1-123-875-11	ELECT 10uF 20% 50V	
C89	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C90	1-124-477-11	ELECT 47uF 20% 25V	
C91	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C92	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C93	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
C94	1-161-375-00	CERAMIC 0.0022uF 20% 50V	

Ref. No.	Part No.	Description	Remark
C95	1-124-791-11	ELECT 1uF 20% 50V	
C96	1-124-791-11	ELECT 1uF 20% 50V	
C97	1-124-791-11	ELECT 1uF 20% 50V	
C98	1-124-791-11	ELECT 1uF 20% 50V	
C99	1-136-154-00	FILM 0.012uF 5% 50V	
C100	1-136-154-00	FILM 0.012uF 5% 50V	
C101	1-123-875-11	ELECT 10uF 20% 50V	
C102	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C103	1-124-463-00	ELECT 0.1uF 20% 50V	
C104	1-124-791-11	ELECT 1uF 20% 50V	
C105	1-124-791-11	ELECT 1uF 20% 50V	
C106	1-124-791-11	ELECT 1uF 20% 50V	
C107	1-162-282-31	CERAMIC 100PF 10% 50V	(G. IT)
C108	1-162-211-31	CERAMIC 33PF 5% 50V	(EXCEPT G. IT)
C108	1-162-291-31	CERAMIC 560PF 10% 50V	(G. IT)
C109	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C110	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C111	1-124-925-11	ELECT 2.2uF 20% 100V	
C112	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C113	1-161-379-00	CERAMIC 0.01uF 30% 16V	(G. IT)
C114	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C116	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C117	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C199	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C201	1-164-159-11	CERAMIC 0.1uF 50V	
C203	1-164-159-11	CERAMIC 0.1uF 50V	
C211	1-136-161-00	FILM 0.047uF 5% 50V	
C212	1-161-374-11	CERAMIC 0.0015uF 20% 50V	
C213	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C214	1-124-902-00	ELECT 0.47uF 20% 50V	
C215	1-164-159-11	CERAMIC 0.1uF 50V	
C221	1-162-207-31	CERAMIC 22PF 5% 50V	
C222	1-162-207-31	CERAMIC 22PF 5% 50V	
C223	1-124-443-00	ELECT 100uF 20% 10V	
C225	1-136-165-00	FILM 0.1uF 5% 50V	
C229	1-123-875-11	ELECT 10uF 20% 50V	
C231	1-161-374-11	CERAMIC 0.0015uF 20% 50V	
C232	1-161-374-11	CERAMIC 0.0015uF 20% 50V	
C233	1-162-286-31	CERAMIC 220PF 10% 50V	
C234	1-162-286-31	CERAMIC 220PF 10% 50V	
C235	1-124-791-11	ELECT 1uF 20% 50V	
C236	1-124-791-11	ELECT 1uF 20% 50V	
C237	1-123-875-11	ELECT 10uF 20% 50V	
C238	1-123-875-11	ELECT 10uF 20% 50V	
C249	1-126-176-11	ELECT 220uF 20% 10V	
C401	1-162-282-31	CERAMIC 100PF 10% 50V	(EXCEPT G. IT)
C401	1-162-294-31	CERAMIC 0.001uF 10% 50V	(G. IT)

Ref. No.	Part No.	Description	Remark
C402	1-162-282-31	CERAMIC 100PF 10% 50V	
C403	1-162-290-31	CERAMIC 470PF 10% 50V	(EXCEPT G. IT)
C451	1-162-282-31	CERAMIC 100PF 10% 50V	(EXCEPT G. IT)
C451	1-162-294-31	CERAMIC 0.001uF 10% 50V	(G. IT)
C452	1-162-282-31	CERAMIC 100PF 10% 50V	
C453	1-162-290-31	CERAMIC 470PF 10% 50V	(EXCEPT G. IT)
C471	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C472	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C473	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C474	1-162-215-31	CERAMIC 47PF 5% 50V	
C475	1-164-159-11	CERAMIC 0.1uF 50V	
C491	1-164-159-11	CERAMIC 0.1uF 50V	
C492	1-164-159-11	CERAMIC 0.1uF 50V	
C493	1-164-159-11	CERAMIC 0.1uF 50V	
C494	1-164-159-11	CERAMIC 0.1uF 50V	
C600	1-162-294-31	CERAMIC 0.001uF 10% 50V	(EXCEPT H70)
C601	1-136-161-00	FILM 0.047uF 5% 50V	
C602	1-124-925-11	ELECT 2.2uF 20% 100V	
C603	1-124-925-11	ELECT 2.2uF 20% 100V	
C604	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C611	1-162-217-31	CERAMIC 56PF 5% 50V	
C612	1-136-157-00	FILM 0.022uF 5% 50V	
C613	1-124-925-11	ELECT 2.2uF 20% 100V	
C614	1-124-925-11	ELECT 2.2uF 20% 100V	
C615	1-124-443-00	ELECT 100uF 20% 10V	
C622	1-164-159-11	CERAMIC 0.1uF 50V	
C651	1-136-161-00	FILM 0.047uF 5% 50V	
C652	1-124-925-11	ELECT 2.2uF 20% 100V	
C653	1-124-925-11	ELECT 2.2uF 20% 100V	
C654	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C656	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C662	1-126-153-11	ELECT 22uF 20% 6.3V	
C663	1-124-925-11	ELECT 2.2uF 20% 100V	
C671	1-164-159-11	CERAMIC 0.1uF 50V	
C672	1-136-173-00	FILM 0.47uF 5% 50V	
C673	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C674	1-164-159-11	CERAMIC 0.1uF 50V	
C675	1-164-159-11	CERAMIC 0.1uF 50V	
C677	1-164-159-11	CERAMIC 0.1uF 50V	
C698	1-123-875-11	ELECT 10uF 20% 50V	
C699	1-124-478-11	ELECT 100uF 20% 25V	
C701	1-162-290-31	CERAMIC 470PF 10% 50V	
C702	1-162-290-31	CERAMIC 470PF 10% 50V	
C703	1-124-254-00	ELECT 0.68uF 20% 50V	
C704	1-123-875-11	ELECT 10uF 20% 50V	
C705	1-123-875-11	ELECT 10uF 20% 50V	
C706	1-124-902-00	ELECT 0.47uF 20% 50V	

MAIN, JACK, CAPACITOR, POWER

Ref. No.		Part No.	Description	Remark
C730		1-162-282-31	CERAMIC 100PF 10% 50V	(AEP, UK)
C730		1-162-294-31	CERAMIC 0.001uF 10% 50V	(G, IT)
C731		1-162-282-31	CERAMIC 100PF 10% 50V	
C732		1-162-282-31	CERAMIC 100PF 10% 50V	
C733		1-130-474-00	MYLAR 0.0018uF 5% 50V	(EXCEPT H70)
C734		1-130-480-00	MYLAR 0.0056uF 5% 50V	(EXCEPT H70)
C735		1-123-875-11	ELECT 10uF 20% 50V	(EXCEPT H70)
C736		1-124-791-11	ELECT 1uF 20% 50V	(EXCEPT H70)
C743		1-164-159-11	CERAMIC 0.1uF 50V	
C751		1-162-290-31	CERAMIC 470PF 10% 50V	
C752		1-162-290-31	CERAMIC 470PF 10% 50V	
C753		1-124-254-00	ELECT 0.68uF 20% 50V	
C754		1-123-875-11	ELECT 10uF 20% 50V	
C755		1-123-875-11	ELECT 10uF 20% 50V	
C756		1-124-902-00	ELECT 0.47uF 20% 50V	
C780		1-162-282-31	CERAMIC 100PF 10% 50V	(AEP, UK)
C780		1-162-294-31	CERAMIC 0.001uF 10% 50V	(G, IT)
C781		1-162-282-31	CERAMIC 100PF 10% 50V	
C782		1-162-282-31	CERAMIC 100PF 10% 50V	
C783		1-130-474-00	MYLAR 0.0018uF 5% 50V	(EXCEPT H70)
C784		1-130-480-00	MYLAR 0.0056uF 5% 50V	(EXCEPT H70)
C785		1-123-875-11	ELECT 10uF 20% 50V	(EXCEPT H70)
C786		1-124-791-11	ELECT 1uF 20% 50V	(EXCEPT H70)
C791		1-123-875-11	ELECT 10uF 20% 50V	
C792		1-161-379-00	CERAMIC 0.01uF 20% 25V	
C793		1-123-875-11	ELECT 10uF 20% 50V	
C794		1-161-379-00	CERAMIC 0.01uF 20% 25V	
C797		1-161-379-00	CERAMIC 0.01uF 20% 25V	
C798A		1-161-379-00	CERAMIC 0.01uF 20% 25V	
C798B		1-130-475-00	MYLAR 0.0022uF 5% 50V	(EXCEPT H70)
C799		1-130-471-00	MYLAR 0.001uF 5% 50V	(EXCEPT H70)
C801		1-123-875-11	ELECT 10uF 20% 50V	
C802		1-162-290-31	CERAMIC 470PF 10% 50V	(EXCEPT G, IT)
C803		1-126-233-11	ELECT 22uF 20% 50V	
C804		1-164-159-11	CERAMIC 0.1uF 50V	
C805		1-164-159-11	CERAMIC 0.1uF 50V	
C809		1-162-294-31	CERAMIC 0.001uF 10% 50V	(G, IT)
C851		1-123-875-11	ELECT 10uF 20% 50V	
C852		1-162-290-31	CERAMIC 470PF 10% 50V	(EXCEPT G, IT)
C853		1-126-233-11	ELECT 22uF 20% 50V	
C854		1-164-159-11	CERAMIC 0.1uF 50V	
C855		1-164-159-11	CERAMIC 0.1uF 50V	
C859		1-162-294-31	CERAMIC 0.001uF 10% 50V	(G, IT)
C871	⚠·	1-124-618-11	ELECT 2200uF 20% 35V	
C872	⚠·	1-124-618-11	ELECT 2200uF 20% 35V	
C873		1-124-120-11	ELECT 220uF 20% 25V	

Ref. No.		Part No.	Description	Remark
C874	⚠·	1-124-484-11	ELECT 220uF 20% 35V	
C875	⚠·	1-123-875-11	ELECT 10uF 20% 50V	
C876		1-123-875-11	ELECT 10uF 20% 50V	
C877	⚠·	1-123-875-11	ELECT 10uF 20% 50V	
C878	⚠·	1-124-910-11	ELECT 47uF 20% 50V	
C879	⚠·	1-124-910-11	ELECT 47uF 20% 50V	
C880		1-124-910-11	ELECT 47uF 20% 50V	
C899		1-164-159-11	CERAMIC 0.1uF 50V	
C996		1-126-163-11	ELECT 4.7uF 20% 50V	
C997		1-124-791-11	ELECT 1uF 20% 50V	
C998		1-126-154-11	ELECT 47uF 20% 6.3V	
C999		1-123-875-11	ELECT 10uF 20% 50V	
C1001		1-162-282-31	CERAMIC 100PF 10% 50V	(G, IT)
C2001		1-162-379-00	CERAMIC 0.01uF 30% 16V	(G, IT)
C4001		1-162-306-11	CERAMIC 0.01uF 20% 16V	(G, IT)
C4002		1-162-306-11	CERAMIC 0.01uF 20% 16V	(G, IT)
C8001		1-161-379-00	CERAMIC 0.01uF 30% 16V	(G, IT)
C8002		1-161-294-31	CERAMIC 0.001uF 10% 50V	(G, IT)
C8003		1-164-159-11	CERAMIC 0.1uF 50V	(G, IT)
C8004		1-164-159-11	CERAMIC 0.1uF 50V	(G, IT)

< CIRCUIT BREAKER >

Ref. No.		Part No.	Description	Remark
CB801	⚠·	1-532-564-00	BREAKER, CIRCUIT (2.2A)	
CB851	⚠·	1-532-564-00	BREAKER, CIRCUIT (2.2A)	

< FILTER >

Ref. No.		Part No.	Description	Remark
CF1		1-567-389-11	FILTER, CERAMIC 10.7MHz	
CF2		1-567-389-11	FILTER, CERAMIC 10.7MHz	(G, IT)
CF81		1-567-389-11	FILTER, CERAMIC 10.7MHz	

< CONNECTOR >

Ref. No.		Part No.	Description	Remark
CN201	*	1-569-155-11	PLUG, CONNECTOR 10P	
CN202		1-568-802-11	SOCKET, CONNECTOR 19P	
CN253	*	1-564-339-71	PIN, CONNECTOR 5P	
CN401A	*	1-568-851-11	SOCKET, CONNECTOR 8P	
CN601	*	1-569-511-11	SOCKET, CONNECTOR 14P	
CN701	*	1-569-155-11	PLUG, CONNECTOR 10P	
CN702	*	1-569-155-11	PLUG, CONNECTOR 10P	
CN703	*	1-568-832-11	SOCKET, CONNECTOR 13P	
CN704	*	1-568-834-11	SOCKET, CONNECTOR 15P	
CN705	*	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	(EXCEPT H70)
CN706	*	1-564-336-00	PIN, CONNECTOR 2P	
CN801	*	1-508-694-00	PIN, CONNECTOR 8P	
CN802	*	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	

<COMPOSITION CIRCUIT BLOCK>

Ref. No.		Part No.	Description	Remark
CP201	*	1-233-224-11	COMPOSITION CIRCUIT BLOCK (100P×5)	

< TRIMMER >

Ref. No.		Part No.	Description	Remark
CT21		1-141-227-00	CAP, TRIMMER	(H70)
CT22		1-141-227-00	CAP, TRIMMER	(H70)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D21	8-719-902-79	DIODE KV1236Z (H70)	
D201	8-719-010-34	DIODE UZ-4.7BSC	
D205	8-719-912-20	DIODE 1SS120	
D601	8-719-912-20	DIODE 1SS120	
D602	8-719-200-82	DIODE 11ES2	
D603	8-719-200-82	DIODE 11ES2	
D604	8-719-912-20	DIODE 1SS120	
D605	8-719-200-82	DIODE 11ES2	
D606	8-719-010-15	DIODE UZ-3.0BS	
D701	8-719-933-48	DIODE HZS7B3L	
D702	8-719-933-48	DIODE HZS7B3L	
D703	8-719-933-36	DIODE HZS6B1L	
D741	8-719-912-20	DIODE 1SS120	
D742	8-719-912-20	DIODE 1SS120	
D743	8-719-912-20	DIODE 1SS120	
D744	8-719-912-20	DIODE 1SS120	
D745	8-719-912-20	DIODE 1SS120	
D746	8-719-912-20	DIODE 1SS120	
D801	8-719-912-20	DIODE 1SS120	
		< CONNECTOR >	
DA11A	* 1-564-342-11	PIN, CONNECTOR 8P	
DA11B	* 1-506-503-61	PIN, CONNECTOR 9P	
DR12A	* 1-564-337-00	PIN, CONNECTOR 3P	
DR12B	* 1-564-337-61	PIN, CONNECTOR 3P	
DR82A	* 1-564-339-00	PIN, CONNECTOR 5P	
DR82B	* 1-564-339-61	PIN, CONNECTOR 5P	
DR83B	* 1-564-338-61	PIN, CONNECTOR 4P	
		< INDUCTOR >	
FB801⚠	* 1-410-858-11	INDUCTOR (G, IT)	
FB802⚠	* 1-410-858-11	INDUCTOR (G, IT)	
		< FRONT END >	
FE1	1-465-007-11	FRONT END (FM) (4 GANG) (G, IT)	
FE1	1-465-283-11	FRONT END (2 GANG) (EXCEPT G, IT)	
		< ENCAPSULATED COMPONENT >	
FE2	1-236-462-11	ENCAPSULATED COMPONENT (EXCEPT H70)	
FE2	1-236-777-11	ENCAPSULATED COMPONENT (H70)	
FE3	1-236-463-11	ENCAPSULATED COMPONENT (EXCEPT H70)	
FL81	1-236-465-11	ENCAPSULATED COMPONENT (G, IT)	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC51	8-759-239-29	IC TC9217P	
IC81	8-759-821-45	IC LA1851N	
IC201	8-759-150-19	IC uPD75112CW-064	
IC202	8-752-335-15	IC CXD2500Q	
IC221	8-752-337-09	IC CXD2554P	
IC222	8-759-990-13	IC TDA1543A	
IC223	8-759-634-51	IC M5218AP	
IC253	8-759-633-65	IC M54641L	
IC401	8-759-634-50	IC M5218AL	
IC451	8-759-634-50	IC M5218AL	
IC601	8-759-152-31	IC uPD4053BC-A	
IC602	8-752-038-00	IC CXA1298AP	
IC603	8-759-634-50	IC M5218AL	
IC604	8-759-632-54	IC M50964-212SP	
IC701	8-752-034-26	IC CXA1101P	
IC702	8-759-634-50	IC M5218AL	
IC703	8-759-152-32	IC uPD4066BC-A	
IC704	8-759-634-50	IC M5218AL (EXCEPT H70)	
IC705	8-759-630-42	IC M4052BPK	
IC706	8-759-605-16	IC M51953BL	
IC801	⚠ 8-749-920-13	IC STK-4132MK2	
IC999	8-759-821-93	IC LA5601	
IFT81	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)	
IFT82	1-404-807-11	TRANSFORMER, DISCRIMINATOR	
		< JACK >	
J401	1-562-837-21	JACK (MIX MIC)	
J451	1-562-837-21	JACK (HEADPHONES)	
J701	1-569-181-11	JACK, PIN 2P (VIDEO/AUX) (H70)	
J701	1-569-181-11	JACK, PIN 2P (PHONO) (EXCEPT H70)	
		< COIL >	
L1	1-408-425-00	INDUCTOR 220uH (EXCEPT H70)	
L81	1-408-399-00	INDUCTOR 1.5mH	
L83	1-410-489-11	INDUCTOR 390uH	
L1001	1-410-521-11	INDUCTOR 100uH (G, IT)	
		< FILTER >	
LPF81	1-235-164-00	FILTER, LOW PASS	
LPF82	1-235-164-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-620-19	TRANSISTOR 2SC2724-CD	
Q2	8-729-620-19	TRANSISTOR 2SC2724-CD (G, IT)	
Q3	8-729-900-80	TRANSISTOR DTC114ES	
Q4	8-729-900-61	TRANSISTOR DTA114ES	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN, JACK, CAPACITOR, POWER

Ref. No.	Part No.	Description	Remark
Q5	8-729-900-80	TRANSISTOR DTC114ES	
Q6	8-729-900-80	TRANSISTOR DTC114ES	
Q7	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q9	8-729-900-80	TRANSISTOR DTC114ES	
Q10	8-729-900-80	TRNSISTOR DTC114ES	
Q51	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q52	8-729-201-84	TRANSISTOR 2SC3112-B	
Q53	8-729-202-67	TRANSISTOR 2SK246-GR3	(EXCEPT H70)
Q54	8-729-201-84	TRANSISTOR 2SC3112-B	(EXCEPT H70)
Q101	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q102	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q103	8-729-900-80	TRANSISTOR DTC114ES	
Q201	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q231	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q232	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q233	8-729-900-65	TRANSISTOR DTA144ES	
Q234	8-729-900-80	TRANSISTOR DTC114ES	
Q252	8-729-900-80	TRANSISTOR DTC114ES	
Q253	8-729-900-80	TRANSISTOR DTC114ES	
Q601	8-729-900-61	TRANSISTOR DTA114ES	
Q602	8-729-900-61	TRANSISTOR DTA114ES	
Q603	8-729-900-61	TRANSISTOR DTA114ES	
Q604	8-729-900-61	TRANSISTOR DTA114ES	
Q605	8-729-900-61	TRANSISTOR DTA114ES	
Q606	8-729-900-61	TRANSISTOR DTA114ES	
Q607	8-729-900-61	TRANSISTOR DTA114ES	
Q608	8-729-801-84	TRANSISTOR 2SB1013-4	
Q609	8-729-801-84	TRANSISTOR 2SB1013-4	
Q610	8-729-801-84	TRANSISTOR 2SB1013-4	
Q611	8-729-801-84	TRANSISTOR 2SB1013-4	
Q612	8-729-801-84	TRANSISTOR 2SB1013-4	
Q613	8-729-900-80	TRANSISTOR DTC114ES	
Q614	8-729-900-80	TRANSISTOR DTC114ES	
Q615	8-729-904-39	TRANSISTOR DTC114TS	
Q616	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q617	8-729-900-80	TRANSISTOR DTC114ES	
Q701	8-729-904-39	TRANSISTOR DTC114TS	
Q741	8-729-900-89	TRANSISTOR DTC144ES	
Q742	8-729-900-89	TRANSISTOR DTC144ES	
Q751	8-729-904-39	TRANSISTOR DTC114TS	
Q781	8-729-900-61	TRANSISTOR DTA114ES	
Q782	8-729-900-61	TRANSISTOR DTA114ES	
Q791	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q792	8-729-920-98	TRANSISTOR 2SD1761-EF	
Q794	8-729-900-61	TRANSISTOR DTA114ES	
Q801	8-729-900-89	TRANSISTOR DTC144ES	
Q999	8-729-900-80	TRANSISTOR DTC114ES	

Ref. No.	Part No.	Description	Remark
		< RESISTOR >	
R1	1-249-411-11	CARBON 330 5% 1/4W	
R2	1-249-393-11	CARBON 10 5% 1/4W	(G, IT)
R2	1-249-411-11	CARBON 330 5% 1/4W	(EXCEPT G, IT)
R3	1-247-891-00	CARBON 330K 5% 1/4W	
R4	1-249-411-11	CARBON 330 5% 1/4W	
R5	1-247-891-00	CARBON 330K 5% 1/4W	(G, IT)
R6	1-249-411-11	CARBON 330 5% 1/4W	(G, IT)
R7	1-249-405-11	CARBON 100 5% 1/4W	
R8	1-249-441-11	CARBON 100K 5% 1/4W	
R9	1-249-437-11	CARBON 47K 5% 1/4W	
R10	1-249-421-11	CARBON 2.2K 5% 1/4W	(H70)
R10	1-249-437-11	CARBON 47K 5% 1/4W	(EXCEPT H70)
R11	1-249-421-11	CARBON 2.2K 5% 1/4W	(EXCEPT H70)
R11	1-249-429-11	CARBON 10K 5% 1/4W	(H70)
R12	1-249-421-11	CARBON 2.2K 5% 1/4W	(EXCEPT H70)
R12	1-249-429-11	CARBON 10K 5% 1/4W	(H70)
R13	1-249-433-11	CARBON 22K 5% 1/4W	(EXCEPT H70)
R14	1-249-432-11	CARBON 18K 5% 1/4W	(EXCEPT H70)
R15	1-247-903-00	CARBON 1M 5% 1/4W	(EXCEPT H70)
R20	1-249-425-11	CARBON 4.7K 5% 1/4W	
R21	1-249-429-11	CARBON 10K 5% 1/4W	(H70)
R22	1-249-429-11	CARBON 10K 5% 1/4W	(H70)
R50	1-249-441-11	CARBON 100K 5% 1/4W	
R51	1-249-417-11	CARBON 1K 5% 1/4W	
R52	1-249-417-11	CARBON 1K 5% 1/4W	
R53	1-249-441-11	CARBON 100K 5% 1/4W	
R54	1-249-417-11	CARBON 1K 5% 1/4W	
R55	1-249-425-11	CARBON 4.7K 5% 1/4W	
R56	1-249-405-11	CARBON 100 5% 1/4W	
R57	1-249-401-11	CARBON 47 5% 1/4W	
R58	1-249-423-11	CARBON 3.3K 5% 1/4W	
R59	1-249-414-11	CARBON 560 5% 1/4W	
R60	1-249-417-11	CARBON 1K 5% 1/4W	
R61	1-249-410-11	CARBON 270 5% 1/4W	
R62	1-249-418-11	CARBON 1.2K 5% 1/4W	
R63	1-249-421-11	CARBON 2.2K 5% 1/4W	
R64	1-249-425-11	CARBON 4.7K 5% 1/4W	
R65	1-249-425-11	CARBON 4.7K 5% 1/4W	
R66	1-249-405-11	CARBON 100 5% 1/4W	(EXCEPT G, IT)
R67	1-249-423-11	CARBON 3.3K 5% 1/4W	(EXCEPT H70)
R68	1-249-414-11	CARBON 560 5% 1/4W	(EXCEPT H70)
R69	1-249-417-11	CARBON 1K 5% 1/4W	(EXCEPT H70)
R70	1-249-410-11	CARBON 270 5% 1/4W	(EXCEPT H70)
R71	1-249-433-11	CARBON 22K 5% 1/4W	(EXCEPT H70)

Ref. No.	Part No.	Description			Remark
R72	1-249-421-11	CARBON	2.2K	5%	1/4W(EXCEPT H70)
R73	1-249-425-11	CARBON	4.7K	5%	1/4W(EXCEPT H70)
R74	1-249-425-11	CARBON	4.7K	5%	1/4W(EXCEPT H70)
R76	1-249-393-11	CARBON	10	5%	1/4W
R81	1-249-433-11	CARBON	22K	5%	1/4W
R82	1-249-417-11	CARBON	1K	5%	1/4W
R83	1-249-399-11	CARBON	33	5%	1/4W
R84	1-249-429-11	CARBON	10K	5%	1/4W
R85	1-249-429-11	CARBON	10K	5%	1/4W
R86	1-249-437-11	CARBON	47K	5%	1/4W
R87	1-249-409-11	CARBON	220	5%	1/4W
R88	1-249-429-11	CARBON	10K	5%	1/4W
R89	1-249-429-11	CARBON	10K	5%	1/4W
R90	1-249-421-11	CARBON	2.2K	5%	1/4W
R91	1-249-421-11	CARBON	2.2K	5%	1/4W
R92	1-247-891-00	CARBON	330K	5%	1/4W
R93	1-247-891-00	CARBON	330K	5%	1/4W
R94	1-249-417-11	CARBON	1K	5%	1/4W
R95	1-249-417-11	CARBON	1K	5%	1/4W
R96	1-249-425-11	CARBON	4.7K	5%	1/4W
R97	1-249-425-11	CARBON	4.7K	5%	1/4W
R98	1-249-404-00	CARBON	82	5%	1/4W
R99	1-249-417-11	CARBON	1K	5%	1/4W(EXCEPT G, IT)
R99	1-249-420-11	CARBON	1.8K	5%	1/4W (G, IT)
R100	1-247-848-11	CARBON	5.1K	5%	1/4W
R102	1-249-430-11	CARBON	12K	5%	1/4W(EXCEPT G, IT)
R103	1-249-428-11	CARBON	8.2K	5%	1/4W
R104	1-249-435-11	CARBON	33K	5%	1/4W
R105	1-249-431-11	CARBON	15K	5%	1/4W
R106	1-249-417-11	CARBON	1K	5%	1/4W
R107	1-249-430-11	CARBON	12K	5%	1/4W(G, IT)
R201	1-249-441-11	CARBON	100K	5%	1/4W
R202	1-249-441-11	CARBON	100K	5%	1/4W
R203	1-249-422-11	CARBON	2.7K	5%	1/4W
R204	1-249-422-11	CARBON	2.7K	5%	1/4W
R205	1-249-437-11	CARBON	47K	5%	1/4W
R206	1-249-437-11	CARBON	47K	5%	1/4W
R207	1-249-437-11	CARBON	47K	5%	1/4W
R208	1-249-437-11	CARBON	47K	5%	1/4W
R209	1-249-429-11	CARBON	10K	5%	1/4W
R210	1-249-437-11	CARBON	47K	5%	1/4W
R211	1-249-423-11	CARBON	3.3K	5%	1/4W
R212	1-249-423-11	CARBON	3.3K	5%	1/4W
R213	1-249-429-11	CARBON	10K	5%	1/4W
R214	1-249-437-11	CARBON	47K	5%	1/4W
R215	1-249-429-11	CARBON	10K	5%	1/4W
R216	1-249-441-11	CARBON	100K	5%	1/4W
R217	1-249-411-11	CARBON	330	5%	1/4W

Ref. No.	Part No.	Description			Remark
R218	1-249-411-11	CARBON	330	5%	1/4W
R219	1-249-417-11	CARBON	1K	5%	1/4W
R220	1-249-421-11	CARBON	2.2K	5%	1/4W
R231	1-249-429-11	CARBON	10K	5%	1/4W
R232	1-249-425-11	CARBON	4.7K	5%	1/4W
R233	1-249-429-11	CARBON	10K	5%	1/4W
R234	1-249-393-11	CARBON	10	5%	1/4W
R235	1-249-417-11	CARBON	1K	5%	1/4W
R236	1-249-417-11	CARBON	1K	5%	1/4W
R237	1-249-419-11	CARBON	1.5K	5%	1/4W
R238	1-249-419-11	CARBON	1.5K	5%	1/4W
R239	1-249-433-11	CARBON	22K	5%	1/4W
R241	1-249-413-11	CARBON	470	5%	1/4W
R242	1-249-417-11	CARBON	1K	5%	1/4W
R243	1-249-411-11	CARBON	330	5%	1/4W
R244	1-249-411-11	CARBON	330	5%	1/4W
R245	1-249-421-11	CARBON	2.2K	5%	1/4W
R247	1-249-433-11	CARBON	22K	5%	1/4W
R248	1-249-421-11	CARBON	2.2K	5%	1/4W
R249	1-249-429-11	CARBON	10K	5%	1/4W
R250	1-249-429-11	CARBON	10K	5%	1/4W
R286	1-249-405-11	CARBON	100	5%	1/4W
R287	1-249-405-11	CARBON	100	5%	1/4W
R288	1-249-405-11	CARBON	100	5%	1/4W
R289	1-249-405-11	CARBON	100	5%	1/4W
R290	1-249-405-11	CARBON	100	5%	1/4W
R291	1-249-413-11	CARBON	470	5%	1/4W
R292	1-249-413-11	CARBON	470	5%	1/4W
R293	1-249-413-11	CARBON	470	5%	1/4W
R294	1-249-413-11	CARBON	470	5%	1/4W
R295	1-249-413-11	CARBON	470	5%	1/4W
R296	1-249-413-11	CARBON	470	5%	1/4W
R297	1-249-413-11	CARBON	470	5%	1/4W
R298	1-249-413-11	CARBON	470	5%	1/4W
R299	1-249-441-11	CARBON	100K	5%	1/4W
R401	1-249-417-11	CARBON	1K	5%	1/4W
R402	1-249-441-11	CARBON	100K	5%	1/4W
R403	1-249-436-11	CARBON	39K	5%	1/4W
R404	1-249-425-11	CARBON	4.7K	5%	1/4W
R405	1-249-401-11	CARBON	47	5%	1/4W
R406	1-249-429-11	CARBON	10K	5%	1/4W
R451	1-249-417-11	CARBON	1K	5%	1/4W
R452	1-249-441-11	CARBON	100K	5%	1/4W
R453	1-249-436-11	CARBON	39K	5%	1/4W
R454	1-249-425-11	CARBON	4.7K	5%	1/4W
R455	1-249-401-11	CARBON	47	5%	1/4W
R456	1-249-429-11	CARBON	10K	5%	1/4W
R471	1-249-429-11	CARBON	10K	5%	1/4W
R472	1-249-411-11	CARBON	330	5%	1/4W

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Ref. No.	Part No.	Description				Remark
R473	1-249-441-11	CARBON	100K	5%	1/4W	
R474	1-249-408-11	CARBON	180	5%	1/4W	
R475	1-249-441-11	CARBON	100K	5%	1/4W	
R601	1-249-420-11	CARBON	1.8K	5%	1/4W	
R602	1-247-887-00	CARBON	220K	5%	1/4W	
R604	1-249-418-11	CARBON	1.2K	5%	1/4W	
R605	1-249-441-11	CARBON	100K	5%	1/4W	
R606	1-249-441-11	CARBON	100K	5%	1/4W	
R609	1-249-441-11	CARBON	100K	5%	1/4W	
R610	1-249-441-11	CARBON	100K	5%	1/4W	
R611	1-249-441-11	CARBON	100K	5%	1/4W	
R612	1-249-441-11	CARBON	100K	5%	1/4W	
R613	1-249-441-11	CARBON	100K	5%	1/4W	
R614	1-249-441-11	CARBON	100K	5%	1/4W	
R615	1-249-441-11	CARBON	100K	5%	1/4W	
R616	1-249-429-11	CARBON	10K	5%	1/4W	
R617	1-249-429-11	CARBON	10K	5%	1/4W	
R618	1-249-428-11	CARBON	8.2K	5%	1/4W	
R619	1-249-423-11	CARBON	3.3K	5%	1/4W	
R620	1-249-417-11	CARBON	1K	5%	1/4W	
R621	1-249-417-11	CARBON	1K	5%	1/4W	
R622	1-249-429-11	CARBON	10K	5%	1/4W	
R623	1-249-429-11	CARBON	10K	5%	1/4W	
R624	1-249-434-11	CARBON	27K	5%	1/4W	
R651	1-249-420-11	CARBON	1.8K	5%	1/4W	
R652	1-247-887-00	CARBON	220K	5%	1/4W	
R654	1-249-418-11	CARBON	1.2K	5%	1/4W	
R655	1-249-441-11	CARBON	100K	5%	1/4W	
R656	1-249-441-11	CARBON	100K	5%	1/4W	
R661	1-249-425-11	CARBON	4.7K	5%	1/4W	
R662	1-249-425-11	CARBON	4.7K	5%	1/4W	
R663	1-249-425-11	CARBON	4.7K	5%	1/4W	
R664	1-249-425-11	CARBON	4.7K	5%	1/4W	
R665	1-249-437-11	CARBON	47K	5%	1/4W	
R666	1-249-437-11	CARBON	47K	5%	1/4W	
R667	1-249-437-11	CARBON	47K	5%	1/4W	
R668	1-247-895-00	CARBON	470K	5%	1/4W	
R669	1-247-895-00	CARBON	470K	5%	1/4W	
R670	1-249-421-11	CARBON	2.2K	5%	1/4W	
R671	1-249-421-11	CARBON	2.2K	5%	1/4W	
R672	1-249-421-11	CARBON	2.2K	5%	1/4W	
R673	1-249-417-11	CARBON	1K	5%	1/4W	
R674	1-249-421-11	CARBON	2.2K	5%	1/4W	
R675	1-249-426-11	CARBON	5.6K	5%	1/4W	
R676	1-249-429-11	CARBON	10K	5%	1/4W	
R677	1-249-429-11	CARBON	10K	5%	1/4W	
R678	1-249-429-11	CARBON	10K	5%	1/4W	
R679	1-249-429-11	CARBON	10K	5%	1/4W	
R680	1-249-429-11	CARBON	10K	5%	1/4W	
R681	1-249-421-11	CARBON	2.2K	5%	1/4W	
R682	1-249-421-11	CARBON	2.2K	5%	1/4W	
R683	1-249-421-11	CARBON	2.2K	5%	1/4W	
R684	1-249-421-11	CARBON	2.2K	5%	1/4W	
R685	1-249-421-11	CARBON	2.2K	5%	1/4W	
R686	1-249-405-11	CARBON	100	5%	1/4W	
R687	1-249-429-11	CARBON	10K	5%	1/4W	
R688	1-247-903-00	CARBON	1M	5%	1/4W	
R689	1-249-429-11	CARBON	10K	5%	1/4W	
R690	1-249-429-11	CARBON	10K	5%	1/4W	
R699	1-249-397-11	CARBON	22	5%	1/4W	
R702	1-249-431-11	CARBON	15K	5%	1/4W	
R703	1-249-437-11	CARBON	47K	5%	1/4W	
R704	1-249-424-11	CARBON	3.9K	5%	1/4W	
R705	1-249-429-11	CARBON	10K	5%	1/4W	
R707	1-249-437-11	CARBON	47K	5%	1/4W	
R708	1-249-437-11	CARBON	47K	5%	1/4W	
R709	1-249-421-11	CARBON	2.2K	5%	1/4W	
R710	1-249-421-11	CARBON	2.2K	5%	1/4W	
R712	1-249-425-11	CARBON	4.7K	5%	1/4W	
R713	1-249-426-11	CARBON	5.6K	5%	1/4W	
R731	1-249-417-11	CARBON	1K	5%	1/4W	(EXCEPT H70)
R731	1-249-425-11	CARBON	4.7K	5%	1/4W	(H70)
R732	1-249-437-11	CARBON	47K	5%	1/4W	
R733	1-249-437-11	CARBON	47K	5%	1/4W	(EXCEPT H70)
R734	1-247-897-11	CARBON	560K	5%	1/4W	(EXCEPT H70)
R735	1-249-417-11	CARBON	1K	5%	1/4W	(EXCEPT H70)
R736	1-249-425-11	CARBON	4.7K	5%	1/4W	(EXCEPT H70)
R737	1-249-437-11	CARBON	47K	5%	1/4W	(EXCEPT H70)
R738	1-249-425-11	CARBON	4.7K	5%	1/4W	
R740	1-249-425-11	CARBON	4.7K	5%	1/4W	
R742	1-249-405-11	CARBON	100	5%	1/4W	
R744	1-249-429-11	CARBON	10K	5%	1/4W	
R745	1-249-429-11	CARBON	10K	5%	1/4W	
R746	1-249-429-11	CARBON	10K	5%	1/4W	
R747	1-249-405-11	CARBON	100	5%	1/4W	
R748	1-249-405-11	CARBON	100	5%	1/4W	
R752	1-249-431-11	CARBON	15K	5%	1/4W	
R753	1-249-437-11	CARBON	47K	5%	1/4W	
R754	1-249-424-11	CARBON	3.9K	5%	1/4W	
R755	1-249-429-11	CARBON	10K	5%	1/4W	
R757	1-249-437-11	CARBON	47K	5%	1/4W	
R758	1-249-437-11	CARBON	47K	5%	1/4W	
R759	1-249-421-11	CARBON	2.2K	5%	1/4W	
R760	1-249-421-11	CARBON	2.2K	5%	1/4W	
R762	1-249-425-11	CARBON	4.7K	5%	1/4W	
R763	1-249-426-11	CARBON	5.6K	5%	1/4W	
R771	1-249-429-11	CARBON	10K	5%	1/4W	

Ref. No.	Part No.	Description	Remark
R772	1-249-429-11	CARBON 10K 5% 1/4W	
R773	1-247-870-11	CARBON 43K 5% 1/4W	
R774	1-249-437-11	CARBON 47K 5% 1/4W	
R775	1-249-437-11	CARBON 47K 5% 1/4W	
R776	1-249-437-11	CARBON 47K 5% 1/4W	
R781	1-249-417-11	CARBON 1K 5% 1/4W	(EXCEPT H70)
R781	1-249-425-11	CARBON 4.7K 5% 1/4W	(H70)
R782	1-249-437-11	CARBON 47K 5% 1/4W	
R783	1-249-437-11	CARBON 47K 5% 1/4W	(EXCEPT H70)
R784	1-247-897-11	CARBON 560K 5% 1/4W	(EXCEPT H70)
R785	1-249-417-11	CARBON 1K 5% 1/4W	(EXCEPT H70)
R786	1-249-425-11	CARBON 4.7K 5% 1/4W	(EXCEPT H70)
R787	1-249-437-11	CARBON 47K 5% 1/4W	(EXCEPT H70)
R788	1-249-425-11	CARBON 4.7K 5% 1/4W	
R790	1-249-425-11	CARBON 4.7K 5% 1/4W	
R791	1-249-417-11	CARBON 1K 5% 1/4W	
R792	1-249-414-11	CARBON 560 5% 1/4W	
R794A	1-249-411-11	CARBON 330 5% 1/4W	
R794B	1-249-433-11	CARBON 22K 5% 1/4W	(EXCEPT H70)
R795	1-249-435-11	CARBON 33K 5% 1/4W	(EXCEPT H70)
R801	1-249-417-11	CARBON 1K 5% 1/4W	
R802	1-249-438-11	CARBON 56K 5% 1/4W	
R803	1-249-416-11	CARBON 820 5% 1/4W	
R804	1-249-438-11	CARBON 56K 5% 1/4W	
R805	1-249-389-11	CARBON 4.7 5% 1/4W	
R851	1-249-417-11	CARBON 1K 5% 1/4W	
R852	1-249-438-11	CARBON 56K 5% 1/4W	
R853	1-249-416-11	CARBON 820 5% 1/4W	
R854	1-249-438-11	CARBON 56K 5% 1/4W	
R855	1-249-389-11	CARBON 4.7 5% 1/4W	
R856	1-249-417-11	CARBON 1K 5% 1/4W	
R871	1-249-429-11	CARBON 10K 5% 1/4W	
R872	1-249-437-11	CARBON 47K 5% 1/4W	
R873	1-249-429-11	CARBON 10K 5% 1/4W	
R874	1-247-883-00	CARBON 150K 5% 1/4W	
R875	1-249-421-11	CARBON 2.2K 5% 1/4W	
R876	1-249-421-11	CARBON 2.2K 5% 1/4W	
R877	⚠ 1-212-881-11	FUSIBLE 100 5% 1/4W	F
R878	1-249-417-11	CARBON 1K 5% 1/4W	
R879	1-249-417-11	CARBON 1K 5% 1/4W	
R880	⚠ 1-212-881-11	FUSIBLE 100 5% 1/4W	F
R881	1-249-421-11	CARBON 2.2K 5% 1/4W	
R882	1-249-421-11	CARBON 2.2K 5% 1/4W	
R883	⚠ 1-212-881-11	FUSIBLE 100 5% 1/4W	F
R7001	1-247-883-00	CARBON 150K 5% 1/4W	
R7002	1-249-429-11	CARBON 10K 5% 1/4W	
R7003	1-249-429-11	CARBON 10K 5% 1/4W	
R8001	1-249-389-11	CARBON 4.7 5% 1/4W	(G, IT)
R8002	1-249-389-11	CARBON 4.7 5% 1/4W	(G, IT)
		< VARIABLE RESISTOR >	
RV81	1-238-601-11	RES, ADJ, CARBON 22K	
RV82	1-238-601-11	RES, ADJ, CARBON 22K	
RV701	1-238-601-11	RES, ADJ, CARBON 22K	
RV751	1-238-601-11	RES, ADJ, CARBON 22K	
		< SWITCH >	
S701	1-572-185-11	SWITCH, SLIDE (ISS)	(EXCEPT H70)
S702	1-554-088-00	SWITCH, KEYBOARD (SYSTEM RESET)	
		< COIL >	
T1	1-402-424-11	COIL (ANT, SW3)	(H70)
T2	1-402-346-11	COIL (OSC, SW3)	(H70)
		< TEMINAL >	
TB1	* 1-537-138-31	TERMINAL BOARD (ANTENNA)	(EXCEPT H70)
TB1	* 1-537-238-21	TERMINAL BOARD (ANTENNA)	(H70)
TB801	1-537-238-11	TERMINAL BOARD (SPEAKER)	
TP81	* 1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P	
TP601	* 1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P	
TP701	* 1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P	
TP702	* 1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P	(EXCEPT H70)
		< CRYSTAL >	
X51	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)	
X81	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)	
X201	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	
X251	1-567-908-11	VIBRATOR, CRYSTAL (16.9344MHz)	
X601	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	

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Ref. No.	Part No.	Description	Remark
	* 1-624-147-11	MD-A BOARD **********	
		< CAPACITOR >	
C41A	1-162-289-31	CERAMIC 390PF 10% 50V	
C42A	1-136-157-00	FILM 0.022uF 5% 50V	
C43A	1-124-282-00	ELECT 22uF 20% 25V	
C48A	1-162-217-31	CERAMIC 56PF 5% 50V	
C61A	1-162-289-11	CERAMIC 390PF 10% 50V	
C62A	1-136-157-00	FILM 0.022uF 5% 50V	
C63A	1-124-282-00	ELECT 22uF 20% 25V	
C68A	1-162-217-31	CERAMIC 56PF 5% 50V	
C81A	1-126-101-11	ELECT 100uF 20% 16V	
C82A	1-126-101-11	ELECT 100uF 20% 16V	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MD-A **MD-B**

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CNP12A	* 1-564-337-00	PIN. CONNECTOR 3P	
CNP13A	* 1-564-707-11	PIN. CONNECTOR (SMALL TYPE) 5P	
CNP81A	* 1-564-706-11	PIN. CONNECTOR (SMALL TYPE) 4P	
CNP82A	* 1-564-339-00	PIN. CONNECTOR 5P	
		< IC >	
IC81A	8-759-111-44	IC uPC4570C-1	
		< TRANSISTOR >	
Q11A	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R17A	1-249-437-11	CARBON 47K 5% 1/4W	
R18A	1-249-437-11	CARBON 47K 5% 1/4W	
R41A	1-247-881-00	CARBON 120K 5% 1/4W	
R42A	1-249-405-11	CARBON 100 5% 1/4W	
R43A	1-247-882-11	CARBON 130K 5% 1/4W	
R44A	1-249-426-11	CARBON 5.6K 5% 1/4W	
R61A	1-247-881-00	CARBON 120K 5% 1/4W	
R62A	1-249-405-11	CARBON 100 5% 1/4W	
R63A	1-247-882-11	CARBON 130K 5% 1/4W	
R64A	1-249-426-11	CARBON 5.6K 5% 1/4W	
R81A	1-249-409-11	CARBON 220 5% 1/4W	
R82A	1-249-409-11	CARBON 220 5% 1/4W	
		< VARIABLE RESISTOR >	
RV41A	1-228-989-00	RES. ADJ. CARBON 470	
RV61A	1-228-989-00	RES. ADJ. CARBON 470	
**			
	* 1-624-146-11	MD-B BOARD **********	
		< CAPACITOR >	
C41B	1-162-289-31	CERAMIC 390PF 10% 50V	
C42B	1-136-157-00	FILM 0.022uF 5% 50V	
C43B	1-124-282-00	ELECT 22uF 20% 25V	
C44B	1-162-288-31	CERAMIC 330PF 10% 50V	
C45B	1-136-273-91	FILM 75PF 5% 630V	
C47B	1-162-209-31	CERAMIC 27PF 5% 50V	
C48B	1-162-217-31	CERAMIC 56PF 5% 50V	
C61B	1-162-289-11	CERAMIC 390PF 10% 50V	
C62B	1-136-157-00	FILM 0.022uF 5% 50V	
C63B	1-124-282-00	ELECT 22uF 20% 25V	
C64B	1-162-288-31	CERAMIC 330PF 10% 50V	
C65B	1-136-273-91	FILM 75PF 5% 630V	
C67B	1-162-209-31	CERAMIC 27PF 5% 50V	
C68B	1-162-217-31	CERAMIC 56PF 5% 50V	
C81B	1-126-101-11	ELECT 100uF 20% 16V	
C82B	1-126-101-11	ELECT 100uF 20% 16V	
C83B	1-124-791-11	ELECT 1uF 20% 50V	
C84B	1-124-925-11	ELECT 2.2uF 20% 50V	
C85B	1-130-480-00	MYLAR 0.0056uF 5% 50V	
C86B	1-130-476-00	MYLAR 0.0027uF 5% 50V	
C87B	1-130-476-00	MYLAR 0.0027uF 5% 50V	
C88B	1-136-562-11	FILM 0.0082uF 5% 630V	
C89B	1-161-494-00	CERAMIC 0.022uF 25V	
		< CONNECTOR >	
CNP12B	* 1-564-337-61	PIN. CONNECTOR 3P	
CNP13B	* 1-564-707-11	PIN. CONNECTOR (SMALL TYPE) 5P	
CNP81B	* 1-564-709-11	PIN. CONNECTOR (SMALL TYPE) 7P	
CNP82B	* 1-564-339-61	PIN. CONNECTOR 5P	
CNP83B	* 1-564-338-61	PIN. CONNECTOR 4P	
CNP84B	* 1-564-704-11	PIN. CONNECTOR (SMALL TYPE) 2P	(EXCEPT H70)
		< DIODE >	
D81B	8-719-107-94	DIODE 1SS202-1	
		< IC >	
IC81B	8-759-111-41	IC uPC4570C-1	
		< COIL >	
L41B	1-410-780-11	INDUCTOR 27mH	
L61B	1-410-780-11	INDUCTOR 27mH	
		< TRANSISTOR >	
Q11B	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q81B	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q82B	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q83B	8-729-142-46	TRANSISTOR 2SC2001-LK	
		< RESISTOR >	
R17B	1-249-437-11	CARBON 47K 5% 1/4W	
R18B	1-249-437-11	CARBON 47K 5% 1/4W	
R41B	1-247-881-00	CARBON 120K 5% 1/4W	
R42B	1-249-405-11	CARBON 100 5% 1/4W	
R43B	1-247-882-11	CARBON 130K 5% 1/4W	
R44B	1-249-426-11	CARBON 5.6K 5% 1/4W	
R45B	1-249-430-11	CARBON 12K 5% 1/4W	
R61B	1-247-881-00	CARBON 120K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R62B	1-249-405-11	CARBON 100 5% 1/4W	
R63B	1-247-882-11	CARBON 130K 5% 1/4W	
R64B	1-249-426-11	CARBON 5.6K 5% 1/4W	
R65B	1-249-430-11	CARBON 12K 5% 1/4W	
R81B	1-249-409-11	CARBON 220 5% 1/4W	
R82B	1-249-409-11	CARBON 220 5% 1/4W	
R83B	1-249-429-11	CARBON 10K 5% 1/4W	
R84B	⚠· 1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
R85B	1-249-435-11	CARBON 33K 5% 1/4W	
R86B	1-249-435-11	CARBON 33K 5% 1/4W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV41B	1-228-989-00	RES, ADJ, CARBON 470	
RV42B	1-230-500-11	RES, ADJ, CARBON 220K	
RV61B	1-228-989-00	RES, ADJ, CARBON 470	
RV62B	1-230-500-11	RES, ADJ, CARBON 220K	

< RELAY >

Ref. No.	Part No.	Description	Remark
RY81B	1-515-614-11	RELAY	

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* 1-634-870-11 SHIELD BOARD
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< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C528	1-123-875-11	ELECT 10uF 20% 50V	
C529	1-125-447-11	DOUBLE LAYERS 1F 5.5V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN504	* 1-564-336-00	PIN, CONNECTOR 2P	

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MISCELLANEOUS
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Ref. No.	Part No.	Description	Remark
911	1-535-832-12	JUMPER, FILM (WITH TERMINAL)	
918	1-533-213-31	HOLDER, FUSE	
919	1-575-675-11	WIRE, FLAT TYPE (14 CORE)	
920	1-575-674-11	WIRE, FLAT TYPE (8 CORE)	
921	1-575-672-11	WIRE, FLAT TYPE (13 CORE)	
922	1-575-673-11	WIRE, FLAT TYPE (15 CORE)	
924	* 1-533-213-31	HOLDER, FUSE (H70)	
925	* 1-562-908-11	CONNECTOR, FEMALE (NO SHIELD) (G, IT)	
ANT1	1-501-270-00	ANTENNA, TELESCOPIC (H66, H70, H77)	
F901	⚠· 1-532-078-00	FUSE (1A) (EA, H77, H1400)	
F901	⚠· 1-532-215-00	FUSE, TIME-LAG (0.8A) (E, AUS, H66, H1200)	
F902	⚠· 1-532-259-11	FUSE, GLASS TUBE (1.6A) (H70)	
HE1 HRP1	A-2003-504-A	CHASSIS ASSY, HEAD (PB/REC/ERASE) (DECK B)	
HP1	A-2003-503-A	PC BOARD ASSY, HEAD (PB) (DECK A)	

Ref. No.	Part No.	Description	Remark
M1	X-3343-447-1	MOTOR ASSY (DECK A)	
M2	X-3343-447-1	MOTOR ASSY (DECK B)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M251	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
PM1	1-454-456-11	SOLENOID, PLUNGER (DECK A)	
PM2	1-454-456-11	SOLENOID, PLUNGER (DECK B)	
T901	⚠· 1-450-462-11	TRANSFORMER, POWER (H77, H1400)	
T901	⚠· 1-450-463-11	TRANSFORMER, POWER (H66, H1200)	
T901	⚠· 1-450-464-11	TRANSFORMER, POWER (H70)	

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ACCESSORY & PACKING MATERIAL

Ref. No.	Part No.	Description	Remark
	1-465-342-11	REMOTE COMMANDER (RM-S100) (H66, H1200)	
	1-465-692-11	REMOTE COMMANDER (H70, H77, H1400)	
	1-501-369-11	ANTENNA (UK)	
	1-501-369-11	ANTENNA (H1200:AEP, H1400) (MHC)	
	1-501-374-11	ANTENNA, LOOP (UK)	
	1-501-374-11	ANTENNA, LOOP (EXCEPT UK) (FH)	
	⚠· 1-569-007-11	ADAPTOR, CONVERSION 2P (E) (FH)	
	⚠· 1-569-008-11	ADAPTOR, CONVERSION 2P (EA) (FH)	
	⚠· 1-555-074-00	CORD, POWER (AUS) (FH)	
	⚠· 1-556-280-00	CORD, POWER (E) (FH)	
	⚠· 1-558-032-11	CORD, POWER (UK) (FH)	
	⚠· 1-575-131-11	CORD, POWER (H66, EA, H77, H1200:AEP, H1400) (FH)	
	1-575-495-11	CORD, SPEAKER (H1200, H1400) (MHC)	
	2-181-754-01	COVER, BATTERY	
	3-753-064-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (H66:AEP, H1200:AEP) (FH)	
	3-753-064-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (UK)	
	3-753-064-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (H66, H1200) (FH)	
	3-753-065-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (H70, H77, H1400) (FH)	
	3-753-065-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, PORTUGUESE, ITALIAN) (H77, H1400) (FH)	
	* 4-936-852-01	CUSHION (LOWER)	
	* 4-936-853-01	CUSHION (UPPER)	
	* 4-936-899-01	CUSHION	
	* 4-944-526-01	INDIVIDUAL, CARTON (E, EA) (FH)	
	* 4-944-527-01	INDIVIDUAL, CARTON (AUS) (FH)	
	* 4-944-528-01	INDIVIDUAL, CARTON (H77) (FH)	
	* 4-944-529-01	INDIVIDUAL, CARTON (H1400) (FH)	
	* 4-944-530-01	INDIVIDUAL, CARTON (H66) (FH)	
	* 4-944-531-01	INDIVIDUAL, CARTON (H1200:AEP) (FH)	
	* 4-944-532-01	INDIVIDUAL, CARTON (UK)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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